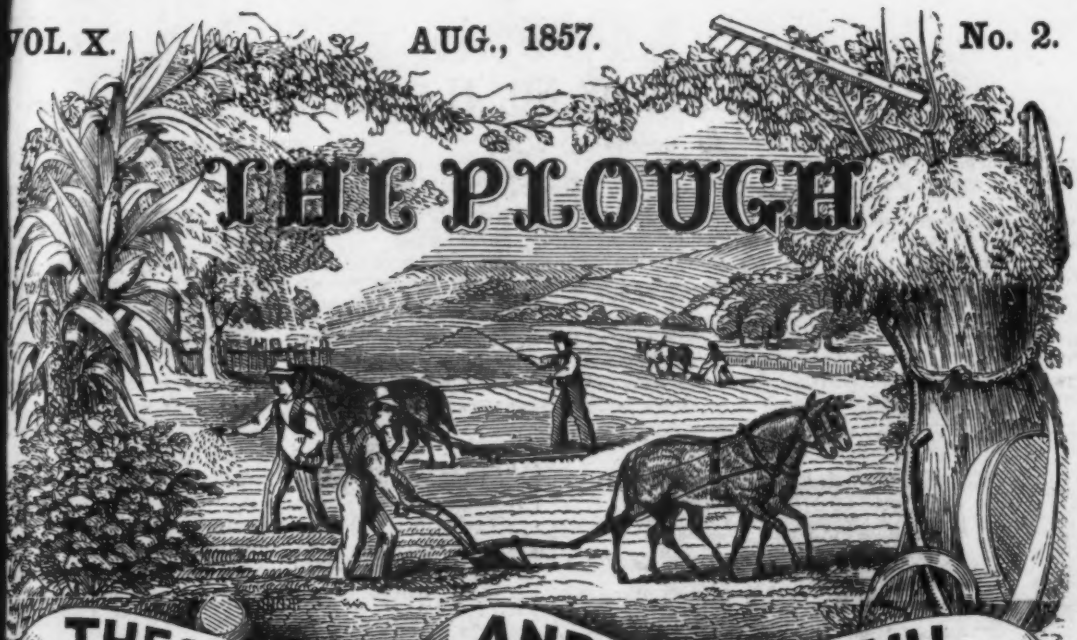
VOL. X. AUG., 1857. No. 2.

# THE PLOUGH



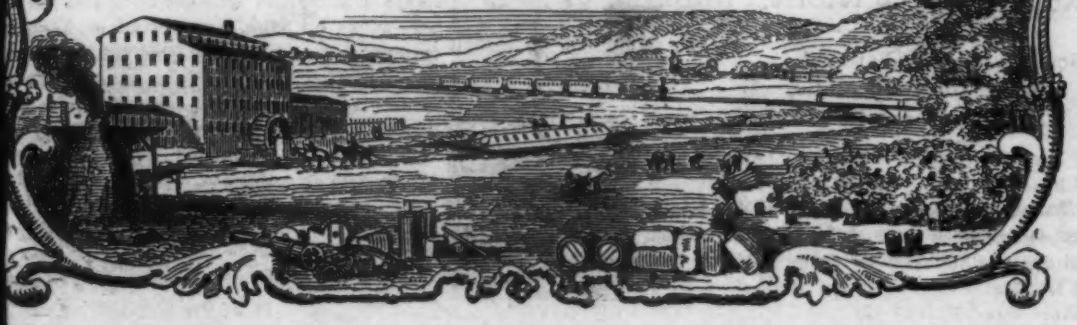
## THE LOOM AND THE ANVIL.

## AN AMERICAN FARMERS' MAGAZINE

AND MECHANICS' GUIDE.

NEW-YORK: No. 7 BEEKMAN STREET.

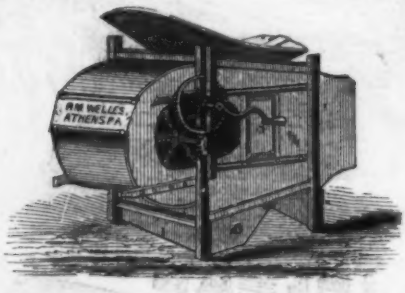
J. A. NASH & M. P. PARISH, EDITORS & PUBLISHERS.



# CONTENTS OF NO. II.—VOL. X.


| | PAGE |
|---|---|
| Rural Economy of England, Scotland, and Ireland, | 65 |
| Peruvian Guano, | 69 |
| Did you ever? | 77 |
| Rearing and Feeding of Swine, | 79 |
| In Health prepare for Sickness—in Summer for Winter, | 80 |
| Mowers, | 84 |
| Underdraining | 85 |
| Danvers Town Farm, Essex Co., Mass, | 86 |
| Green-Manuring, | 86 |
| Utility of Birds, | 87 |
| Onions, | 88 |
| Drouth, Protection against, | 89 |
| The Cotton Crop, | 90 |
| Editorial Correspondence, | 91 |
| The Camel Experiment, | 93 |
| Lime, | 93 |
| Horticultural, | 94 |
| Recent Patents, | 103 |
| Recent Foreign Inventions, | 108 |
| Trial of Reapers and Mowers, | 113 |
| The Family Circle, | 117 |
| Domestic, | 124 |
| Children's Page, | 127 |
| Book Notices, | 128 |






## The Excelsior Fanning-Mill.

This is the neatest, cheapest, and best Fanning-Mill known, and is warranted to be second to no other made in the United States for durability, simplicity, rapidity in doing work, or for any of the purposes for which a good fan-mill is designed.

**One Size only. Price, $25. Pulley for Power, $1 extra.**

A very liberal discount made to Dealers, who are invited to order sample Mills, which we will box if required.

All we ask is for you to see the *Excelsior*, and give it a trial. Manufactured only by us, at the Tioga Point Agricultural Works.

**R. M. WELLES & BROOKS,**
ATHENS, BRADFORD CO., PA.

Agents for New-York City,
GRIFFING, BROTHER & CO.,
60 COURTLANDT ST. Aug 3t.

## OHIO MECHANICS' INSTITUTE,
CINCINNATI, OHIO.

### Fifteenth Exhibition of Art and Manufacture.

We desire to call the attention of Manufacturers, Mechanics, Artists, Inventors, and others, to the above Exhibition, which will be opened in Cincinnati on Thursday, September 10th, and continued daily until the 30th, in a commodious fire proof building which has been erected for the purpose.

It is desirable that those intending to exhibit articles should give early notice to Mr. J. B. Heich, the Clerk of the Institute, who will promptly give any information that may be desired.

By order of the Committee,
Aug. 3t. C. F. WILSTACH, CHAIRMAN.

## NEW-YORK CENTRAL RAILROAD.

On and after Monday, May 25th, Trains will run as follows:

GOING WEST.

| Leave Albany. | | Arr. Buff. | Arr. Susp. Br'ge. |
|---|---|---|---|
| *6 30 A.M., | (Exp | 8.00 P.M. | .... 8.50 P.M. |
| 7.30 " | (Exp | 7.50 " | .... 8 30 " |
| 9.15 " | (Mail | " | .... |
| 11.30 " | (Exp | 9.00 " | .... 9.40 " |
| 3.30 P.M., | (Accom | to Utica only. | |
| 6 00 " | (Exp | 6 50 A.M. | .... 6.50 A.M. |
| 11.30 " | (Exp | 10.15 " | .. 11.00 " |

*Awaits at Rochester the arrival of 7.30 A.M. Train.

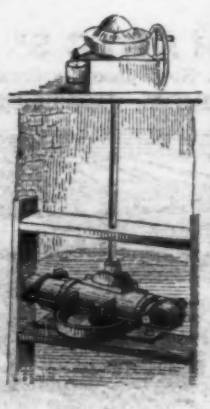
COMING EAST.

| Leave Buffalo. | | Leave Susp. Br'ge. | Arr. Albany. |
|---|---|---|---|
| 5.40 A.M., | (Exp | 5.45 A.M. | .... 4.20 P.M. |
| 8.30 " | (Exp | 7.30 " | .... 8.00 " |
| 6.00 P.M., | (Exp | 6.00 P.M. | .... 4.15 A.M. |
| 11.15 " | (Exp | 11.15 " | .... 8.45 " |
| | | Accom. from Utica | .... 10.30 " |

C. VIBBARD, General Sup't.

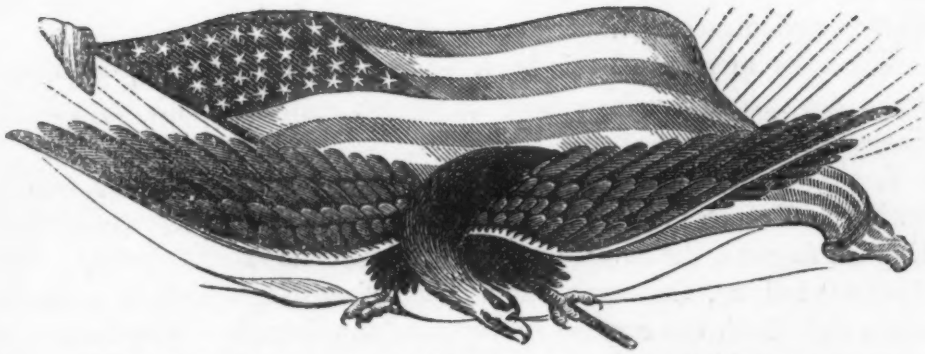
## LINDSEY'S
## Rotary Force & Lift Pump.

**Best Pump for Cisterns,**
**Best Pump for Wells,**
**Best Pump for Engines,**
**Best Pump for Railroads.**



This Pump, patented in *England* and *America*, is now *greatly improved*, and in successful operation in various parts of the world. It is *warranted to work by hand all depths under one hundred feet!* and is made, pipe and all, of wrought and THE cast-iron—will not get out of order, will not rust, will not freeze, will last an age—any body can put it up—works by hand, water, wind, or steam—throws and raises water from ten to thirty gallons per minute—has side-gearing and balance-wheels; and costs, *complete*, for all depths under one hundred feet, from $20 to $60. Drawings, with full particulars and prices, sent free of postage to all parts of the world, on application to

**JAMES M. EDNEY,**
GENERAL AGENT AND COM. MERCHANT,
56 JOHN STREET, N. Y.




# AMERICAN FARMERS' MAGAZINE.

VOL. X. AUGUST, 1857. No. 2.


## Rural Economy of England, Scotland, and Ireland.

BY M. LEONCE DE LAVERGNE.

IN 1855 a Frenchman of the above name, after enjoying great advantages for understanding the agriculture of his own country and of Great Britain, published a book of 400 pages, octavo, with the above title, in which he gives a vivid description of the agriculture of the United Kingdom, and with admirable discrimination compares it with the less prosperous condition of this great branch of human industry in his own France.

Lavergne's book was translated into English, and republished in England and read by everybody there. He did the English people ample justice, and by this they were gratified; he did it better than any Englishman had been able to do the same thing, and by this they were mortified. They were astonished that a little Frenchman should run over the Channel, mingle among them a few years, and then go back to belle France, knowing more of them than they knew of themselves, and telling the story better than their best writers had told it. That they should feel a little chagrin can not be wondered at.

But the English have always had the good sense when a thing was done, to make the best of it, even if their king had lost them their best provinces. It was so now. The book praised them, and they praised it. As the laudations were deserved on both sides, there was nothing unfair in the exchange. It might serve to prolong the alliance between the granddaughter of George III. and the nephew of Napoleon. To praise and be praised is well enough; but to be praised first and then to return the compliment better comports with John

Bull's dignity; and as for his writers, we advise them to redeem their laurels, by giving the world as truthful and graphic an account of French agriculture as Lavergne has of English.

We have mentioned this book for the purpose of giving our readers a few instructive facts from its pages; and first with regard to Sheep culture.

Lavergne informs us that wool has always been the primary object with the French farmer; meat only a secondary object; while with English farmers, the reverse has always been the favorite policy. He does not tell us, that now the carcase of an English sheep is worth more than both the carcase and wool of the French. If he had told us this, it would not have been far from the truth. Robert Bakewell, of the Dishley farm, in Leicestershire, conceived the idea of breeding a race of sheep, that would give as much meat at the end of one year, as the old did at the end of three. He set about it. By the perseverance of a lifetime, he accomplished the object, made himself rich, trebled the profits of sheep farming throughout the midland counties, and gave England more wealth than their Australian gold will ever give.

While Bakewell was doing this for the central regions, John Ellman commenced an operation equally favorable for the chalk hills of the south, which resulted in the establishment of the farmers' Southdowns, so called from the downs (hills) on which they were first reared, though why those hills, which skirt nearly the whole south of England are called Downs, is more than we know, unless it be from the short, sweet, downy grass that grows upon them. Others commenced the Cheviot race, a hardy, large-bodied, long-wooled (we suppose we ought to say long haired) race, adapted to the cold mountainous regions of North Britain.

These races soon spread into other parts; and as the English have long studied adaptations, it was natural that each should diverge towards regions similar in soil and climate to that in which it originated. Other breeds have arisen, but these are the principal; the Southdown for the chalky or lime regions, where the grass is short, thick, and sweet; the Leicesters, or Dishleys, as sometimes called, from the farm of the originator, for the rich valleys; and the Cheviots for the cold, mountainous regions. Up to the time of these improvements, it had been the custom of English farmers to give their sheep good pasturage through the summer, and to leave them to shirk as they could in winter. From being very fat in the fall, they became very lean in spring. Such men as Bakewell and Ellman reasoned that if a frog will be long in getting out of a well, by jumping up three feet in the day time and falling back as far in the night, a sheep will come

slowly to maturity, if he gain in summer and lose about as much in winter.

Their idea was to breed from parents maturing early, so as to create a tendency to early maturity, and then to feed in winter sufficiently to make up for the deficiency of the pasturage, in order to mature them by one continuous growth instead of three or four growths and retro-growths. Would not animals reach a larger size in one or two years, than in three or four? The result has shown that they will. The present generation of English farmers are growing team horses, oxen, cows, sheep, swine, in about half the time their grandfathers did, and in many cases of larger size. Since George III., instigated by the very learned and amiable, but much mistaken Lord North, set the dogs of war upon our fathers, the average weight of horned cattle slaughtered at the Smithfield market has doubled. The average weight of sheep in the whole kingdom has probably increased as much.

Lavergne assures us that the cattle strengthened in England, including veals, are twice and a half as heavy as those slaughtered in his own country, on the average. It should be considered, however, that in France a larger proportion are slaughtered as veals, and fewer are raised from the very fact that by the practice there prevailing it requires about twice as long to rear an animal, and consequently the farmer can rear but about half as many. Lavergne states that the Leicester sheep get their full growth in one year, and average one hundred lbs. of mutton; that the South-downs, on the shorter feed of calcareous soils require a year and a half, and average 80 lbs., and that the Cheviots in the North of England and the adjoining regions of Scotland, come to maturity in about two years, and give on an average a little less weight than the South-downs. He believes that the present tendency is for these three races to absorb all others; and he considers the English to have been profoundly wise in looking as they have, almost exclusively, at the meat producing qualities of their flocks. If they have hitherto palmed upon us rather too much of the cloths made from the sheep, whose mutton chops are more to be commended than their wool, it may be well for us to look to that hereafter; and if our Congress should look at it the next winter, and correct what we consider to be an error of the last, the material prosperity of our country would not fail to be promoted.

That large portions of this country can produce the finest of wool advantageously, there is not the least reason to doubt. That such wool should enjoy a reasonable protection we do not object, but wish that the duty in its favor were somewhat higher than it is, because we believe that the French and the German policy of keeping sheep

almost entirely for their wool—sheep that will give 10 or 12 lbs. of meat to the quarter and 3 or 4 lbs. of exceedingly fine wool, is the very best policy for a portion of the farmers of this country, promotive of their own and the national wealth. But we as confidently believe that the policy of the English, that of feeding sheep to weigh 25 lbs. to the quarter, and to give more wool but coarser, is the true policy of another portion of American farmers. Are the only sheep "pleasant to the eye and good for food" to be driven from the country, because the lazy Spaniards or creoles on the pampas of South America, with their stolen farms of three leagues square, can afford to grow wool for nothing, and throw away the carcase? Is there a man among us who is unwilling to give a cent more for his blanket, or two cents more for his working pants, or three more for his business coat, if made from wool grown by American farmers and manufactured by American mechanics? And yet we do not believe that a protection on medium and lower grades of wool, sufficient to quicken the hands of industry in every part of the land, would raise the price of these articles so much; and sure we are that it would give us more money to buy with of one another, than if the money for such articles is all to be sent to other countries. We have heard a great many reasons why the grower of sheep, whose meat is needed among us, but will not alone quite remunerate the grower, should be turned off without a cent of protection on the wool, because not of the first quality; but all the reasons which we have heard seem to us just no reasons at all. Our reasoning is, that the meat of these large, beautiful, hardy sheep, which everywhere adorn the hills and valleys of Old England, will almost remunerate the grower of them. If then he alone is not to go unprotected, he can make it a good business to grow them, for their meat and wool together, to adorn with them our shores and river sides and lake coasts, and to make them as truly a source of national supply and of general industry as the finer-wooled sheep better suited to higher and more inland situations. We believe that if there is one thing that should be protected more than any other, if it be admitted that a government may care in any respect for the industries of the people, it is the fleece of these very sheep, which Lavergne considers the surest source of agricultural wealth, affording the best of food but not the finest of wool, quickly growing, of hardy habit, and better suited to large portions of our country than any other.

We may have recorded too many of our own thoughts, where we promised interesting and important facts from Lavergne, but our readers shall hear more from him hereafter.—Ed.

## Peruvian Guano.

*An Account of the Guano Trade at the Chincha Islands, on the Coast of Peru.*

An intelligent gentleman, Maurice F. Nash, of New-York, who has been employed in loading ships with guano at the Chincha Islands, on the coast of Peru, has communicated to me much interesting information with regard to the trade. He has been at the islands at three different times, and nearly six months in all. The last time he was there was in the fall and summer of 1855. He says that he found at times five hundred sail of vessels together at the islands loading with guano, generally large ships; one ship was 4,500 tons burthen. Not less than 500 sail of vessels are now at the islands loading for the United States, Spain, Portugal, France, and English and German ports; some cargoes are sent to Constantinople, and some to Russian ports in the Black Sea. This was before the war in the Crimea; the Russian trade will now open again, both from the Black Sea and the Baltic. Freights are high, £6 10s are often paid a ton for Liverpool and Hampton Roads; generally 10 shillings more per ton freight is paid to Europe. At the rate at which guano is now shipped from the Chincha Islands, it will be exhausted in eight years; not a ton will be left. Twenty thousand tons are sometimes removed from the islands in a single day. These islands are situated opposite to the city of Pisco, 130 miles south and south-east from Callao and Lima, on the west coast of Peru, within the tropics, in latitude about 13°, 46′ south of the equator, in the great bay or bight of the coast. It never freezes, snows, or rains at these islands; fogs are seldom seen; but in the winter months, which are June, July, and August, dews come on at night occasionally; water does not fall in sufficient quantities to furnish a drink at the islands from one year's end to another, nor do the eaves of the houses drop water.

The Chincha Islands form a group about 10 miles from the mainland on the Peruvian coast; the rise and fall of the tide at the islands are regular and often equals six feet. The current of the gulf stream works up along the coast from the Straits of Magellan and Cape Horn, out of the Atlantic Ocean towards Panama Bay, by Valparaiso, Lima and Callao. This current is one branch of the Gulf Stream, which divides on the coast of Brazil; one current runs north to the Gulf of Mexico, the other south towards Cape Horn and then up the coast of Peru to the coast south and east of Callao. Here the shore forms a bay or bight, into which the sea exuviæ, consisting of animal matter, the remains of sea animals, floating and shell fish, deposits itself, and forms a vast bed of *sea mud*, of a chalky substance,

containing *ammonia*, nitrogen and phosphate of lime and soda; this mud is of a white *green color.* When the anchors of the ships are raised at the islands they bring up large quantities of this *guano mud*, which, when dried, forms a substance like the guano on the islands, and when mixed with the guano, can not be distinguished from it.

It will be asked from whence has come this great deposit of guano? We answer, from the animal and vegetable matter of the sea. A writer in one of the late English Reviews says: "That sea weed grows from the bottom of the ocean to the surface, in stalks from 1000 to 2500 feet high, having stems scarce as big as a man's finger. A surface fifteen times greater than that of Great Britain covers the ocean with sea weed, stretching west from the Canaries and Cape Verd Islands, and east of the Gulf Stream; this vast dominion is not only filled with vegetable, but also with animal life. All over the ocean in every clime and latitude the water is filled with animal life until every wave is converted into a *crest of light* by animals of the minutest form up to sea monsters, which derive nutriment from the waters impregnated with animal matter. Reason and imagination are equally confounded by the effort to conceive the numbers of those hosts of individual existence generated or annihilated at every passing instant of time. No scheme of numbers can reach them even by approximation. All the materials of organic life are in a state of unceasing change from the minutest animalcule of the ocean to the leviathan of the great deep."

The laws of life and death in the ocean are the same as on land; as we have above hinted the transformations are governed by the same *Divine economy.* The bones left on the field of Waterloo were gathered up to be put on the corn and grass fields of England to make other bones for the fields of Sebastopol and Balaklava.

Man in his natural state was the last and most finished work of creation; he is naturally the longest lived of the whole animal kingdom. We are told by the philosophers that since the creation the remains of the human family alone would cover the land on the globe more than a foot deep of soil. What shall we say, then, of all the other animal and vegetable productions? When death takes place a large portion of all the animal and vegetable productions are carried by the streams and rivers into the ocean and there deposited; the purest water from our springs contains much animal and vegetable, not to say mineral matter, which glides off into the ocean and is there deposited and forms guano.

We find the ocean also instinct and alive everywhere with vegetables and animals in numbers and species beyound conception; these come on the stage of life at periodical times, from a moment to a hun-

dred years, live and all die; and are changed and form other organizations. These decaying animals and vegetables form guano, and form the blue and green mud around our bays and creeks, which is a fertile guano itself. The Gulf Stream commences in the Bay of Panama on the west coast of America, and is occasioned by the combined laws of attraction and motion, or by the centrifugal force of the fluids and air which lie on the surface of the globe. The earth turns on her axis east with a velocity of more than 1000 miles an hour; on the equator it turns so rapidly that it runs away from the power of attraction. The wind and water are not carried forward as fast as the surface of the earth, hence both the wind and the water of the ocean within the tropics form a current to the westward, or rather the earth, runs away from both wind and water and leaves them behind, hence they both set off currents to the west, forming the trade winds, and the Gulf Stream. These are forced west until they strike the Asiatic continent; one branch turns off or is directed by the Eastern shore of Siam, China, and Japan, and forms a gulf stream, which sets north and east to Kamskatska. Another current sets south along the eastern coast of New-Holland to New-Zealand and the Fejee Islands. But the main current continues on through the East Indies into the Indian Ocean, and through it and by the Cape of Good Hope, thence up to the Bay of Guinea and across to the Gulf of Mexico, while another large current sets over from the Cape of Good Hope to South America direct, and then it parts; one stream runs north to the West Indies and the Carribean Sea, and thence into the Gulf of Mexico. The south stream runs below Pernambuco, up along the South American coast, and is kept inside of the Falkland Islands through the Straits of Magellan, thence up by the coast of Chili and Peru, and then falls again into the Bay of Panama to commence another circuit of the globe. The north current on the American coast passes along North America to the coast of Europe, to Norway, then east of Spitsbergen Islands, thence into the Arctic Ocean, north of Russia, which greatly modifies the climate of the Arctic shores, and thence out to Behrings Straits, down the coast of California to the Bay of Panama. It is the law of motion and attraction which is the principal cause of the *ocean tides.* The waves wash the American and Asiatic coasts, and are deflected back to the East, to the opposite shores in unceasing motion, like the pendulum of a clock, keeping one eternal time by tides like the motion of the earth in her orbit and on her axis, hence the high tides of the western sides of the ocean and the Eastern shores of the continents, and that so rapid is the tide that on the occasion of the great earthquake at Japan, in 1855, the surge or tidal wave reached from Japan to California in five hours.

Along these great currents in the ocean the vegetable and animal matter, which fills the ocean, finds its great deposits. When life becomes extinct they become the feeding grounds of the living races, hence the great deposits of *guano* on the western coast of Peru, hence the great feeding grounds of fish on the Grand Banks of Newfoundland, Scotland, Norway, California, Oregon, Behrings Straits, and Brazil, hence the sea eels or the *Beach La Mer* on the coast of New-Holland, and at the Fejee Islands; hence the great whaling grounds on the coast of America and Brazil, in the Okhotsko Sea, in the Indian Ocean, and on the coasts of Africa; hence the sperm whale only is found within the tropics where an abundance of food of a peculiar kind is supplied to produce the white flesh and bone of the sperm whale.

The largest of the Chincha group is two miles in length, and a quarter of a mile wide; this contains only a small quantity of guano. The most northerly is the smallest, being about a mile in length by half a mile in breadth. Guano on this island is 250 feet deep. This island contains a Chinese settlement of Coolies, about 1,000 in number, who are employed in digging guano and loading the vessels. A task is given them each day, and if the gang fail to get out the given number of wagon loads of two tons each a day, their bondage is continued a longer period to make it up; so many months or days being added as wagon loads are wanting.

The Coolies are cheated into the belief that they are to be shipped from China to California and the gold diggings, and are further deceived by the offer of a free passage. The knowing Chinese, or the *mandarins*, ship them; the shipmaster carries them to the Peruvian coast and sells the cargo of living Chinese to the Peruvian Government for his freight money; all this time the Chinamen are kept in irons and confined below in the hold of the ship. The Peruvian Government purchase the cargo of living Coolies, paying the Yankee or English captain a round sum for his care, dilligence and labor in stealing Chinamen from their homes to be sent into the *guano mines* of Peru for life, or for five or seven years, and to be held in bondage or peonage to pay their passage to the glorious land of the *Incas!* Once on the islands a Chinamen seldom gets off, but remains a slave, to die there. The guano is hard and firmly imbedded in strata on the islands, and can only be broken up with the pick-axe and crow-bar; it is then broken and shoveled into the wagons and rolled into the shutes of the vessels and then stowed in the hold of the ship as cargo in bulk, in which shape it is sent to market all round the world; but it loses much of its ammonia in the transportation and exposure to the atmosphere, and is often adulterated with earth. The guano, when

pressed into the hold of the ship is very offensive; the seamen of ships do not go below to trim the ship or to stow cargo; this is done by the native Peruvians, who strip themselves naked, fasten a sponge or a mop of hemp over their mouth and nose, and cover their eyes with a thin gauze, and work below to stow cargo; generally the men below can not work longer than from ten to twenty minutes before they come on deck to catch a breathing spell, when another gang go immediately down below to work and repeat the same operation every fifteen to twenty minutes. These stevedores are paid by the Peruvian Government to stow the cargo at the rate of only one dollar every 500 tons of cargo; this is again a charge on the ship, and amounts to about twenty cents for 100 tons cargo stowed.

The smell of the guano when stowed in the hold of the ship is strongly like quick-lime and hartshorn combined; indeed it is mostly a carbonate of ammonia; the ammonia may have come from a chemical action of the atmosphere, working on animal matter, lime and soda. The animal matter, nitrate of lime and saltpetre, has much to do in the composition of guano at these islands. Such is the opinion of our informant.

No person can go upon or come away from the islands without a pass, as they are guarded by more than one hundred armed soldiers belonging to Peru.

The Peruvians send all their prisoners of state into the guano mines, say about two or three hundred, where they are let out to work by day, and at night are shut up in their cells with only two meals per day.

The prisoners are given twenty-five cents a day by the Government for their support, out of which they are to clothe and feed themselves, and when they can spare a little money they keep a woman; they generally make out to provide themselves with wives, or female companions who have been permitted to go to the islands and hire themselves out for work and prostitution. These are mostly Indian women, who are natives of the country.

There is no fresh water on the islands, and each vessel is compelled by law to carry a ton of fresh water there for every 100 tons burthen of the ship. The oldest captain in the fleet, from each nation, is appointed Commodore *pro tempore*, hoists his flag as such on his ship, where all disputes are settled. Indeed, the municipal laws of the islands and of the fleet are decidedly of Yankee origin.

The islands are composed of new red sandstone, the guano is (not much of it) composed of *bird dung*, but is composed of the mud of the ocean. That brought from Peru is so.

Sea birds and seals come upon the islands when the people are not

at work, but it does not appear that their dung or decayed bodies are more than a foot deep on any of the islands. Fish are taken in great quantities about these islands, as are also seals, which come there in large shoals; sea-lions also abound. The composition taken from the islands called guano is stratified, and lies in the same form it did before it was lifted up from the botton of the ocean. Our informant says that a geological examination of the islands will satisfy any man that what the guano ships are bringing away from these islands is a very different thing from the dung of birds or decomposed land animals.

The whole Peruvian coast opposite these islands is of the latest geological formation, and seems to be volcanic. The Chincha Islands evidently have been thrown up from the bottom of the ocean with their guano on them. The bottom of the ocean on the west coast of Peru contains vast deposits of guano. An island during an earthquake rose up in the bay of Callao, some years since, from the sea, containing guano four feet deep, the formation the same as the Chincha Islands.

The average depth of the ocean is said to be about ten thousand feet, while the average height of all the land above does not exceed one thousand feet. The proportion of land to water is only one fourth of the surface of the globe, perhaps less; now as the ocean is the great basin into which most of the animal and vegetable matter from land and sea is ultimately deposited, and there forms guano, we must look for fertilizers in the deposits of the ocean; and from this source they come. Also the mud of the River Nile, in Egypt, is very fertile; this is so because it is largely composed of animal matter; so is the mud of the Ganges, of the Amazon, of the Mississippi, and of all the great rivers; so is the mud deposited from our cities. The nitrogen from vegetable and animal matter carried down the rivers afford great quantities of food for the fish of various kinds that visit the mouths of the streams, hence the great feeding grounds for fish at the mouth of the Columbia river, the La Plata, the Amazon, the Chesapeake Bay, the St. Lawrence, the Amoor in China, and other notorious streams. So are the deposits of animal matter in the ocean, which raised up have formed the Chincha Islands—guano.

The composition of the guano at the Chincha Islands is evidently marine *animal exuviæ* mixed with lime and soda, which gives out carbonate of ammonia in large quantities when broken; much of the fertility of the guano is lost by exposure to the atmosphere even before it reaches us. The white and blue mud found in our creeks, bays and harbors along the Atlantic coast, is one of the most valuable fertilizers. This mud is mostly composed of animal matter and marine exuviæ. Millions of tons are at hand to be transferred to the compost heap.

This should always be under a shed to preserve the ammonia, and this creek and bay mud will prove itself adequate to the renovation of the fields of the Atlantic coasts. The more animal matter which can be worked into artificial manure, renders them more fertile for vegetable life. Whatever produces ammonia produces fertility.

A snow storm in April is said to be as good for a farmer as a top dressing of manure for his farm. When great storms of snow come down on the earth in winter, we always find heavy crops of vegetation succeed in the summer following. The reason is, when the snow crystalizes in particles in the heavens, they absorb ammonia from the atmosphere, and bring it down to the earth.

The ammonia liquor is the great stimulent for both animal and vegetable life. The reproductive powers of animals contain a superabundance of ammonia, and without it nothing is fertile, but all is barren. During drouth time we have often witnessed attempts at irrigation, but the growth of vegetation under irrigation is small indeed compared with the growth during the same length of time under the operation of rains and showers. The great rains within the tropics produce an abundant growth of vegetation. The water from the heavens brings down large quantities of ammonia.

The guano along our coasts, at the mouths of our rivers, and in the bays and creeks through the Atlantic seaboard, is vast in quantity, almost beyond calculation. This can be transferred to the barn-yard at one half the cost of Peruvian guano, and will prove an invaluable manure. On the south side of the north island, the rock has much slag and *iron ore*, and volcanic cinders in it. On this island is the most of the guano which is found at the islands, and it is stratified in its bed. There are many small islands composing the Chincha group, where birds and seals resort, but very little guano, comparatively speaking, is found on them, and this of an inferior quality. They are not covered with the real guano, but with a deposit of bird lime, or dung, and dead animals, small in quantity and thickness. The seals, when they become sick, come on to the islands to die; they are much inclined also to come on to the shore when not disturbed, to bring forth their young; so does the animal called the sea-lion, which is an *enormous seal*, strong and ferocious. Whales and black-fish are plenty around these islands, and come in shore to clean themselves of the barnacles which accumulate on them.

The sea-elephant is a very large species of seal, from which the sea-elephant oil is taken, and occasionally it appears at these islands; the fish around these islands are eels, in a great abundance also a species of bass, and rock cod, herrings, the fly-fish, the shad-fish, or a fish very similar, a large shell fish, like sea snails and cockel, are found in great quan-

tities around these islands. The whole ocean is alive with inhabitants. This resort of fish brings the seals and birds into these waters in great quantities, which makes this sea their feeding grounds. The same cause on the western coast of Peru, as those on the Grand Banks of Newfoundland, produce the great shoals of fish at the Chincha Islands.

Messrs. Gibbs & Bright, of Liverpool, have a lease of the guano islands from the Peruvian Government for five years, which expires in 1857, but they expect a renewal. This house pays the Peruvian Government about $4 50 a ton for the privilege of taking all the guano from the islands, the Government furnishing the men to dig the guano.

The ships that load at the islands are mostly ships chartered to carry a cargo, or are sent there by the owners to take away a cargo bought of Gibbs & Bright, who have the entire monopoly of the trade at the islands.

The day will come when the guano at these islands will be drudged up with boats, like mud from our rivers and harbors.

ALANSON NASH,
36 Beekman street, New York.

---

## Did You Ever?

WE feel just like telling our farmer readers a story. Some days since a gentleman (we are not so sure of that, a man at any rate) came into our office for the purpose of getting a machine of his, for pulverizing the soil, put before the public, with our commendation. We were out at the time. Our associate told him precisely as we should, had we been on hand, that we could commend nothing till fully satisfied of its excellence, that if he could give us proof that it would be for the farmer's interst to purchase his implement at the price he would sell it for, we would speak of it in fitting terms.

He thought it a prodigious pity that we should have more sympathy for the rich farmer, selling his produce at enormous prices, than for the poor inventor, struggling against poverty, dear bread, and a hard-hearted, unbelieving world, too stingy to throw away the old ploughs and get something better. But the chapter ended, and he left in a dudgeon, as we have since learned he before had several other offices.

A friend of his invited us, some evenings afterwards, to call with him at the inventor's rooms and see him. With some reluctance we called. It was not over and above pleasant to have our associate abused for the very thing we would have done. Nevertheless, we bore it like an Atlas; heard the whole corps editorial used up;

there was not a decent grease spot left; and were told that we were not a whit better than the rest, simply because we were unwilling to commend a new machine, till we could see it, know how it would work, whether it could be had at a price within the profits of agriculture, &c., &c. We made some feeble efforts to show that editors, high and low, Greeley, Bennett, and all the rest, down to our humble selves, are only about as wicked as the rest of mankind. But it was no go. Volubility and loud talk are weapons, from which we think the wisest part of valor is to retreat.

We have told this story for the sake of the moral. The moral is this;—The farmers being industrious, working men, always at home, more or less out of the centers of the earliest news, are very liable to be jockeyed by a set of men who have their foci of operations in our larger cities; and the consequence is, either that they are compelled in self-protection to resist all innovations, and so to hinder the progress of their own most important art; or, if they catch the spirit of the age, and adopt proposed improvements promptly, there is a strong chance for them to be sadly mortified and deeply injured—*cheated* (we don't know a better word for our purpose) out of their hard earnings, by gross imposition. It is not the mechanics who do this. The mechanic is the farmer's best friend—makes his market, is willing to do his work at a reasonable price, and to exchange commodities at fair rates, to live and let live. It is not the inventors, as such, that do the mischief. No man should be held in higher repute than the honest inventor. Nor yet is the manure vender necessarily a rogue. That a good many rogues have got into that business, does not prove that all are such. The business of transfering city offal to the farms is a good business for all parties, if honestly conducted. There is room in it for a large number to operate, and yet so as to leave the country the richer and the city the cleaner.

Who does not know that not one in ten of all useful inventions remain long in the hands of the men who did the brain work? And nearly all useless inventions, either die quick, and are out of the way, or they fall into second hands. It is mainly those who are ever ready to jump on another man's horse and throw the owner off, and not the original inventors, who cheat mankind fore and aft with patents. We will stand up for the inventors, for we want the world to go ahead and to do things in a better way, whenever a better way can be found. But let us ask them one question;—why is it that so many of you fail to hold your own inventions and to reap the reward instead of leaving them to enrich sharpers? Is it not, in too many cases, (we by no means say always,) because you hold the privilege to use your machines or your discoveries so high, that the world will wait longer before it

consents to the bargain, than you can wait for your money? We would say to manure venders and patentees, do not be too grasping. Be willing that the buyers, and those who use your wares, should make money as well as yourself. A deal of guano has been imported into this country. Money has been made on it. But who has made it? The shipper; the vender; we wish we could say the farmer; and doubtless some farmers have profited by it; but not the farmers who have used it, as a whole; for they have bought so much stuff for guano, that was something else, that the real article, as a whole, has cost them over $100 a ton, and the profit has been either small, or out of pocket. The merchants, the middlemen, some of the inventors even, are grasping. They object to a fair division of the profit. Give them a sudden fortune, and they do not care whether God or the devil takes care of the rest.

A case in point;—there is now in this city a plough, digger, spader, pulverizer, or what you choose to call it, seeking buyers at six hundred dollars. The holder of the patent assures us that it will do wonders. O! yes, it can be drawn by a single horse, or a man even, so light is the draft, and it will do more work and better, in one day, than the strongest team with a plough in three, and then it will never get out of repair. The real facts are, that it has some excellent points; but in our judgment, formed from a drawing only, the draft would be entirely too heavy for anything short of a steam power, and the machine always out of running order, except in the most feasible soils.

That the holder of a patent should indulge in expectations, more fanciful than well formed, is nothing strange; nor is it very strange that this man should run away with the idea, as he does, that he has an invention, which the farmers can not get along without, and so will be glad to pay his price, whatever it may be. But let us see how he proposes to divide the profits. He informs us that he can build the machine for $150, and from that to $200 for the very largest and best, but that not one shall be sold short of $600. Now if this man has a machine, which all who cultivate the ground must have; if, as he says, no farmer without it can compete with those who use it, is it generous, is it right to hold it quite so high? Supposing one million, or about one in five, of the farmers in this country, should pay his clean profit of $400, what would one man do with so much money? Or, if he could carry thirty times as much as Jacob Astor ever possessed, would he feel any better for taking so much from the farmers of his country?

We are very far from wishing to compare all who seek the farmer's patronage with this man. There are hosts of implement makers,

seedsmen, manure venders, and patentees, who are willing to deal fairly. But there are others, men who seem to live by honest labor, and to become rich by slow degrees, who are seeking to gouge the laborious, home-keeping cultivators of the soil. They love the farmer no doubt; but they love his money-bag a great deal better; and they are not satisfied to deal with him on terms equally beneficial to both parties; but are managing to make more rich in a year by their trade, than he can in life by constant labor. The evil is a great one, because it forces the farmer to be so on his guard against imposition, that he almost unconsciously falls into an attitude of resistance to real improvements. This unceasing scheming in our cities to gouge the farmers is what more than any other one thing now impedes the progress of agricultural improvement in the whole country. It is a crime against patriotism and humanity, and ought to be intensely detested. —Ed.

---

FOR THE AMERICAN FARMERS' MAGAZINE.

## Rearing and Feeding of Swine.

Messrs. Editors:—It has struck me that I might, in some small measure, aid the cause you advocate, by communicating my views on the rearing and feeding of swine; a topic recently discussed at the meeting of Legislative farmers in Massachusetts. Every farmer should raise and keep a few hogs. In themselves they are valuable, essential in the feed of his family. No man can get along comfortably without the use of a certain quantity of pork. All the parts of the hog will be found convenient in their domestic arrangements. They can be reared and fed without much extra expense, especially on a farm where the dairy processes of making butter and cheese are carried on. But what I would paticularly notice in relation to the hog, is the benefit of his services in preparing fertilizers for their fields. Let a farmer keep half a dozen hogs, and take care to supply them well with material for the making of manure, from the swamp, the meadow, and the road-side, and I hesitate not to say that the value of the manure made by them, at the close of the year, will be quite equal to the value of the meat, even, though it bring, as now, 12 cents per pound. How can the farmer apply some portion of his leisure hours to better advantage, than by looking after such a family of hogs? I remember this was always done on the farm where I was brought up, and they found their account in so doing. What breed of hogs is to be preferred? For a time the Suffolk, with their short legs, round and plump bodies, have been all *the go*; but since it is ascertained that their meat does not cook well in the pot; that there is much uncertainty in procuring fair litters of pigs; and that

their growth costs more a pound than many of our native hogs, their admirers have become few and far between. I heard a man of much experience say, that he would sooner grow the common hog at *ten cents* the pound, than the Suffolk at *twenty-five cents* per pound. If this be so, the Suffolk will go down, for no man will continue to grow pigs for their *beauty alone*. Beauty is of value, but utility more so.

Essex Co., Mass. P.

---

FOR THE AMERICAN FARMERS' MAGAZINE.

## In Health Prepare for Sickness, in Summer for Winter.

Messrs. Editors:—Experience is a good school, although we too often pay a high tuition for that branch of education. The experience of last winter has proved such to many a farmer in this section of the country; and it has taught them a lesson that they will not soon forget. It has been the practice of many to put up just what hay they thought would possibly do by letting their cattle run in the stalk field after the corn was picked. Here they would keep their cattle until they had eaten (because they were forced to) everything they could eat, of the frost-bitten leaves of the cornstalks, before they would feed any hay or even corn. The winters previous to fifty-six and seven have generally been very mild in this portion of country, so that it has required but little care and attention to winter stock. Many prophesied an open winter last fall, and for that reason laid up but a small portion of feed for their stock, cut up but little if any of their corn fodder, but left it for them to pick for themselves, as heretofore.

What has been the consequence? Winter set in very early, and very severe, with a heavy body of snow, so that the cornfield that was designed to keep the cattle for a month or more was entirely buried under snow, and remained so until the last of February. The small quantity of hay that many of them had on hand was entirely fed out. The straw, when the wheat was threshed off from it, was thrown into a pile, and of course was of but little use. After the last of January, or the middle of February, many were out of feed, especially those that were too lazy or negligent to cut hay for stock; and the result was that many of them died.

When I was quite young I was sent from home, owing to the misfortune of having a poor father, to "pick my own living," and as I had the good fortune to get a good place, I stayed there for fourteen years, and during that time my "boss" told me, when I went for myself, to be sure and "lay in a good supply of fodder; to use every thing that would make good food for cattle, and to be sure to have enough in the fall to last through the winter." This advice I have followed. Last August I cut a good supply of hay, and then cut and secured my

corn fodder, so that I had sufficient to last me through a long and severe winter.

This country has taken more curses for its backward spring "than you could shake a stick at." Every one has growled because he has not had feed enough to keep his stock through the long winters, and it is the "meanest country in the world." Who is to blame? Is the Almighty the one to find fault with because we have not feed enough, when he has furnished us thousands of acres of grass, and all we had to do was to cut it and put it up? *No;* it was our own negligence. There was the grass, and why did we not cut it?

Last winter was a severe one. Let us take heed from it, and never let another fall pass over our heads without putting up plenty of fodder, as long as there is plenty of it to cut. Let us take care of our own fodder, cut it up, and secure it, and learn a lesson from the past to guide us in the future. One million of dollars would not cover the money that has been lost by cattle dying for the want of feed, and this in the State of Iowa. Iowa farmers, lay in fodder this coming fall for the extra forty days of winter. Do not say as did Ezekiel, "can these dry bones live?" but say "that these lazy bones shall move." Mr. Editor, may the past winter teach Oliver Shiftless and Mr. Negligent to prepare while in health for sickness. May it teach Mr. Let-go-to-waste to take care of what he has got, and not let his dumb beasts starve. Simon Go-to-town-too-often, stay at home, and put up feed enough to winter your cattle. Do not find fault with Him who makes the grass grow, because you are not at home long enough to cut it. It is your fault, not *His.*

Farmers, and pretend-to-be farmers, take heed from the past, for another winter will soon be upon us. L. S. SPENCER.

LYME, Warren Co., Iowa.

The writer of the above said to us in a private note, "This was written in haste; please put it in shape." We have made the fewest possible alterations, because we like the shape as it is.

Not all parts of the country, like that of our correspondent, have grass enough, and to spare, nor do all parts give hay for the cutting. But where the winter food can not be increased at pleasure, the stock should be diminished, as good sense and forethought may decide. It is bad policy and worse humanity to begin our winters with less feed than stock. Every farmer should be prepared for a hard winter.—ED.

## More about Guano.

Is it of any consequence how we pronounce this word? Not much. It will make the corn grow under one name as well as another; and it will cheat the farmer as badly, if he buys it of a rogue, under one pronunciation as another. Still it might be as well to pronounce the name of an article so common among us correctly. No one of us says *lan-gu-age*, but *lan-guage*, running the u and a into one syllable. Why then should we say *guan-o* or *gu-a-no?* This is murdering the Spanish Queen's lengua and our own language to boot. Make the word of two syllables; pronounce the *gua* precisely as in the English word language; but give the a the sound of a in father, and not the flat sound, and you will be right. So much for the word, and now for the thing.

Our object is to give the farmer some tests, by which he may form an opinion, not very accurate perhaps, yet better than none, of the value of an article that may be presented, with this name. It has become very clear, we think, that no guano yet offered, except that of the Chincha Islands, nor that unless it comes to the farmer very direct nor always even in that case, is worth buying. There may be honest dealers in other guanos; new guanos may yet come into the market; the American guano company in this city has an article which *may* prove good, and they *may* offer it, for a wonder, at a price which would be fair, as between them and the farmer; but as the case now stands, we would advise the farmers not to buy a dollar's worth of any guano except the Peruvian, nor that without the utmost care to get a pure article, inasmuch as it is quite certain that no other will pay at present prices. The truth is, notwithstanding interested efforts to prove the contrary, that the Peruvian guano is not all gone yet. There is considerable of the same sort left, and we should not be sorry to see the holders so brought to their stomachs, as to be willing to dispose of it on the broad principle of "live and let live."

If the buyer is shown an analysis, which he can make up his mind to place confidence in, let him look specially at the figures representing the organic matters containing ammonia, those representing phosphates, and those expressing the proportion of water. In a first rate guano, there will be little water, which, although a good thing for vegetation, we could hardly afford to buy and transport; not more than 20 or 25 per cent of phosphates, which, if good fertilizers, as they certainly are, especially for permanent amendments of soils, are not good enough to be bought at guano prices; and as much as 50 per cent. of organic matters, containing ammonia. Or if, instead of the

organic matters, the amounts of actual and potential ammonia are stated, these should be large, not much less than 20 per cent., if you are to get your money back, as these are the only ingredients for which anything like $60 a ton, or even half that, can be afforded; and we think that the buyer would do well to ascertain, if he can, that the analyst is not a very particular friend of the seller.

But if you are going to buy largely, it would be well to take home a few lbs. as a sample, and experiment with it yourself. Put an accurately weighed lb., spread thinly upon a sheet of paper, into an oven nearly hot enough to bake bread. This should be done soon after the guano is taken from the bulk, as its tendency is to absurb water from the air and become heavier by keeping. If it looses largely, in weight, although the loss might not be wholly of water, yet this would indicate that it contains more water than you would care to buy at a high price.

A general rule is, that *the lighter the color, the better the guano.* This may not in all cases be true, especially with small samples. We have seen those, which were nearly white, and yet not very valuable. But lightness of color is a good indication as far as it goes. It gives at least a strong probability, that the guano is not so far decomposed as to have lost its organic matter.

Rub a pinch of the guano, with as much quick-lime, slightly moistened, between two shingles or bits of board. If it gives out a strong pungent odor, affecting the eyes, causing one to sneeze, and producing a dense vapor about a feather, first dipped in strong vinegar or muriatic acid, and then held over it, it is probably good. If it fails to do this it is certainly inferior, and may be set down as not worth the present price of Peruvian guano.

Next, put a little, say a teaspoonful, into a pint of pure, soft water. Stir it about for some minutes, and then pour off the water with the fine matters floating in it. If any considerable coarse matter remains at the bottom, it is a bad indication. The coarse sediment remaining in the vessel is worth nothing, and much of the finer parts, that flowed off with the water, may be, and probably are, worth but little. But if the guano seems nearly all to dissolve, so that the water flows off but little riled, and almost no sediment is left, the indication is avorable, though not alone to be depended upon.

You might now heat a portion to redness, and throw what is not burned away, into dilute muriatic acid. This can be obtained at almost any apothecary's; one part of acid to three or four of water would be a good proportion. If nearly the whole is not dissolved the indication is a bad one. In the ash of a high priced guano, there

should be nothing, or next to nothing insoluble in dilute muriatic acid.

If, then, you are going to purchase a high-priced guano, relying on analysis, insist that it be highly ammonial, not very phosphatic, and little watery. If you trust to your own judgment, look for that which is nearly dry, which is light in color, stings the eyes and tingles the nose when rubbed with quick-lime, leaves little sediment when washed with water, and almost none when burned and treated to muriatic acid.

In what ratio the value of guano diminishes, as it fails to give the above favorable indications, would be hard to say. But we very much suspect that a good many American farmers have paid considerable sums for guanos sold under false names, and not so valuable, ton for ton, as the sheep manure in their own folds, which they perhaps, though we think unwisely, would have sold for one dollar a ton.—Ed.

---

FOR THE AMERICAN FARMERS' MAGAZINE.

## Mowers.

Messrs. Editors:—I regret my inability to witness the entire operations of the mowers presented at Syracuse; for I consider the experiments undertaken by Col. Wilder and others, of the first importance to the farming community. They have long been waiting with anxious solicitude the perfection of this class of implements. But so long as those who construct them are more anxious to serve themselves by the *sale*, than the farmers by their *use*, we may expect to postpone their *maturity*. There can be no apology in using *timber* or *iron* of *bad quality*, or *bad skill* in their construction—nothing but the best of material and the best of art will answer for such implements. I will not presume to speak of particular implements, because the Committee themselves are much more competent to do this. For *three years* I have been waiting to see a machine that can be relied on, to operate through the day without giving out in some of its parts. Nothing can be more annoying to the practical farmer, who is not expected to be expert in all the mysteries of mechanics, than when his horses are trained ready to move, and his grass is grown ready to be cut, and the sun is shining ready to cure it, and his hands are in readiness to operate, to have his implement fail in a manner that he can not repair—and for reasons that should not have existed, if the maker had been honest. A few such occurrences will forever blast the hopes of the enterprise. I do not mean to charge upon the makers of farm implements, any greater degree of dishonesty than is to be found in most other employments. The fact is the all-absorbing desire to make

money, and to make it without delay, is the bane of all healthy advancement. Too much credit can not be awarded to the highminded and honorable gentlemen, who have come together, from the East, the West, and the South, with a determination fully to understand this matter—and it is to be hoped that their perseverance, with the suggestions of honest Editors, like yourselves, will give the community opinions that will *stand the racket.*

Ever faithfully yours,

BROOKLYN, July 17th, 1857. J. W. PROCTOR.

## Underdraining.

THE importance of a good drain under every post fence, is not generally understood. Wherever post holes retain water, they are sure to be heaved by frost, and the fence thrown out of shape; and the posts can not last so long, where they are alternately subjected to water soaking and drying. But if all the water which falls, passes immediately down into the ditch, it can not lie in contact with the posts long enough to soak them, and as a consequence, they must remain perpetually dry, and last for a long period. Robert B. Howland, of Union Springs, N. Y., who has used Pratt's Ditcher with success, found it cheaper to cut a ditch with this machine, in which to set the posts for a fence, than simply to dig the post-holes by hand, and he thus attained all the advantages of drainage besides a practice well worth copying.

A single suggestion on the efficacy of underdraining, on lands that do not at all appear to need it. It is a very good rule for determining its necessity, to observe whether water will *stand* in holes dug two or three feet for this purpose. If the subsoil is porous, the water will immediately sink away, and ditches would be wholly useless. But if water will stand 48 hours in the holes, draining is necessary to relieve the subsoil of this cold and chilling mass which fills it.

Now, if the surplus water in the soil and subsoil at the wettest period, is only equal to a depth of two inches, then for a ten acre field it would amount to more than *seven thousand hogsheads.* Suppose, therefore, that this field has such a slope as to give it what many would suppose a *natural* drainage—"not needing ditching"—"dry enough already"—then, in getting rid of these seven thousand hogsheads of hurtful water, it must, every gill of it, soak drop by drop, from one particle of earth to another, until it all passes slowly down, and almost imperceptibly from one side of the field to the other. No wonder that days and even weeks are required to complete the process, and to render the land dry enough to become friable and fit to receive seed, and promote the extension of the young roots of crops. Now, give this field a smooth tabular channel or tile, for every two rods of its whole surface, the shortest way down the slope; the water in the soil has then only about *one rod* to soak through the soil before reaching one of these drains, and most of it much less than a rod. When it reaches them, it shoots rapidly down the smooth descending

tube, and in a few minutes has passed the boundary of the field, instead of being otherwise compelled to *soak* its weary way the whole 40 or 50 rods, or entire breadth of the field. This rapid discharge reduces the dryness in so short a time, as to surprise those who have never witnessed it, and to lead to the common supposition that the simple statement of the practical advantages of thorough underdraining, by those who have given it a trial, are wild exaggerations.—*O. Val. Far.*

---

FOR THE AMERICAN FARMERS' MAGAZINE.

## Danvers Town Farm, Essex Co., Mass.

MESSRS. EDITORS:—Two years since, I had occasion to speak to the farmers in the State of Maine, of practical culture in Massachusetts,—and for want of something better, I told them what had actually been, within my own observation, in my own village. Friends Southwich and Shoves, two gentlemen of standing and means, having long acted freely in the capacity of overseers of the poor of the town, advised to the purchase of a farm for their residence, employment, and support. Accordingly, a farm of about 200 acres was purchased—situate about two miles from the population of the village—one half of which was covered with wood—the other half, poor exhausted gravely soil, and peat and sunless meadow—from which crops of the smallest pattern had been gathered by the former occupant. Many were reconciled to the purchase in the belief that the wood in a few years would pay for the farm. The wood was mainly cut at first, and taken to market, and then the treasury was relieved of the purchase.

After the wood was gone, a system of deep ploughing and full manuring was introduced. Some fifty swine were constantly kept to operate the materials gathered from the meadows and swamps. The offal from all the slaughter-houses of the village was secured for the feed of the swine. More than 200 cords of manure was made in the yards. All the liquids from the house, the stable, and the pig-yard, were conducted to the fields for grass. Meadows were ditched and drained. The hard lands were planted with corn, rye, and other grain, and crops of 30 bushels of Indian corn, 45 bushels of rye, and 50 bushels of oats, and 25 bushels of wheat, were grown to the acre. Hay, from three to four tons to the acre, has repeatedly been cut from the reclaimed meadows. So much for the application of industry and skill.

J. W. P.

---

## Green-Manuring.

"IF, instead of having the land exposed only to the action of the atmosphere, we crop it with a plant whose roots run in every direction for food; and if, when this plant has arrived at considerable growth, we turn it into the surface-soil, we have not only enriched the

latter by the elements derived from the air, but also by matters both mineral and vegetable, fetched up from the subsoil. The plant thus acts the part of collecting the nourishment for a future crop, in a way that no mechanical subsoiling or trenching could effect."— *Way.*

---

FROM THE N. E. FARMER.

## Utility of Birds.

EVERY ONE who has paid attention to the matter, knows that even crows and blackbirds are productive of more good than harm, and that the vast increase of late years of destructive insects, is owing almost entirely to the wanton destruction of birds which are not even legitimate game.

In Japan the birds are regarded as sacred, and never under any pretense are they permitted to be destroyed. During the stay of the expedition at Japan a number of officers started on a gunning excursion. No sooner did the people observe the cruel slaughtering of their favorites than a number of them waited on the Commodore and remonstrated against the conduct of the officers. There was no more bird shooting in Japan by American officers after that; and when the treaty between the two countries was concluded, one express condition of it was, that the birds should always be protected. What a commentary upon the inhuman practice of our shooting gentry, who are as eager in the pursuit of a tomtit as of an eagle, and indiscriminately shoot everything in the form of a bird which has the misfortune to come within the reach of their murderous weapons.

On the top of the tombstones in Japan, a small cavity or trough is chiseled, which the priests every morning fill with fresh water for the use of the birds. Enlightened America should imitate these customs of the barbarous Japanese, if not by providing fresh water for the feathered warblers, at least by protecting them from the worthless louts who so ruthlessly destroy them. Unless something is done, and that speedily, our insectivorous birds will be wholly exterminated, and then farewell to fruit-growing. A thousand plans have been suggested for the destruction of the curculio, all of which have proved worthless. We have one which we know to be infallible—"protect the birds."

The swallows are the natural enemies of the swarming insects, living almost entirely upon taking their food upon the wing. The common martin devours great quantities of wasps, beetles, and goldsmiths. A single bird will devour five thousand butterflies in a week. The moral of this is, that the husbandman should cultivate the society of swallows and martins about his land and buildings.

The sparrows and wrens feed upon the crawling insects which lurk within the buds, foliage and flowers of plants. The wrens are pugnacious, and a little box in a cherry tree will soon be appropriated by them, and they will drive other birds away that feed upon the fruit, a hint that cherry growers should remember this spring, and act upon.

The thrushes, blue-birds, jays, and crows, prey upon butterflies, grasshoppers, crickets, locusts, and the larger beetles. A single family of jays will consume 20,000 of these in a season of three months.

The woodpeckers are armed with a stout, long bill, to penetrate the

wood of trees where the borers deposit their larvæ. They live almost entirely upon these worms.

For the insects that come abroad only during the night, nature has provided a check in the nocturnal barn owl, which take their food upon the wing.

How wonderful is this provision of Providence for restraint of depredators that live upon the labors of man, and how careful we should be not to dispute that beneficial law of compensation by which all things are preserved in their just relation and proportion.

---

## Onions.

MR. BROWN :—In your March number of the *Farmer*, I noticed a request of a subscriber for information respecting the culture of onions —and an invitation from yourself to any one who may possess such information to impart it. I perceive, also, in the same number, a communication from Hollis Chaffin, of Providence, R. I., which purports to contain the secret of the whole business, but which, I am sorry to say, I have found to fail in my own case. Having tried almost every experiment in the growing of this vegetable, I feel some confidence in addressing your correspondent on the subject, and assuring him of *one* successful—though it may not, for *large* crops, prove a very profitable mode of raising them.

It was in 1848 the maggot first appeared among my onions, almost entirely destroying the crop, which led me the following year to test many of the modes recommended by agricultural journals for protecting the same. All these plans proved abortive. The next year new experiments were tried, among which was freeing the ground of insects by great fermentation, but this also failed of success. A small crop was raised the subsequent year on rockweed, well decomposed, mixed with soil from an upland pasture. At that time, as none of my neighbors could succeed in the least, I imagined I had discovered the "secret," and presumed that a saline manure was all that was required to prevent injury from maggots, but in this I was mistaken, for the very next season the principal part of the crop was destroyed by this pest.

Speaking one day with a person who had witnessed a mode of raising onions pursued in Nantucket, I was induced to try the following experiment, which I found to succeed. I marked out my bed the size I desired it, and threw out the soil to the depth of eight or ten inches. I then filled in with clam shells, which I then had leveled, and beat into a solid bed with a heavy maul, then slightly covered with rich soil, say *less* than one inch deep. In this I planted the seed, and ever since have found no difficulty in raising fine onions entirely free from the maggot.

The origin of the maggot I have spoken of before in another journal, but for the benefit of such as are unacquainted therewith, I may repeat the substance of what I then said. Almost invariably where a plant droops, it will be found to contain one or more maggots. Now by carefully removing the earth around the plant, will be seen a small insect, which will run from one lump of dirt to another, making great

exertions to secrete itself, which if allowed to do, it will work its way deep into the soil, but if not permitted to hide, will fly away. This insect unquestionably deposits its egg in the envelope of the stock, just under the surface of the ground, and next to the bulb, where it soon starts into life, and eating into the interior of the plant, works its destruction. This pest will not assail the plants where the fly can not penetrate easily into the earth.

OLD ORCHARD,
MAINE, April 13th, 1857. *New-England Farmer.*

## Drouth---Protection Against.

THE frequent stirring of soils between the rows, is undoubtedly a protection, and, in ordinary cases, a sufficient protection against drouth. The air passes freely through soils frequently stirred; and whenever air comes in contact with a body colder than itself, it deposits moisture, as in a tumbler filled with ice water at the dinner table, or in the particles of a soil at some inches depth, and consequently colder than the air above the surface. When the farmer sees his tumbler sweat, as it is sometimes expressed, he may be assured, that so it fares with the soil six or eight inches below a well-stirred surface, provided the soil were mellowed to that or a greater depth before the crop was put in.

Mulching is often an efficient protection against drouth. Straw, coarse hay, leaves, mold from the woods, chips, or even a pile of stones, laid around the roots of a newly-set tree, retards evaporation, and secures a moist condition for the roots. It is so with strawberries if the ground is mulched between the rows. Raspberries, blackberries, gooseberries, and many other crops may be partially protected in the same way.

But the great source of protection in our country is in deep ploughing. On a soil of any decent consistency, it would be impossible that a crop should suffer from the drouth, if the soil were pulverized to a depth of fifteen inches, because the lower portions of such a soil would retain moisture till long after the surface should have received new supplies from the clouds. If our readers are alarmed at fifteen inches as a depth which they despair of reaching, we think them too easily alarmed, but still we will meet them on *higher* ground. A field thoroughly pulverized to a depth of ten inches will seldom suffer from the drouth. Abundant and reliable testimonies have been published, going to show that fields ploughed to a depth of eight or ten inches have escaped unhurt, when other fields, equally well cultivated, with the single exception that they were ploughed but half as deep, have utterly failed of giving crops. That deep ploughing is a sufficient remedy against any ordinary drouth—any but the very longest and severest—is an *established* truth.—ED.

FOR THE AMERICAN FARMERS' MAGAZINE.

## The Cotton Crop.

EDWARDS, Miss., July 11th, 1857.

MESSRS. EDITORS:—We have heard an old adage since our youth, "what is everybody's business is nobody's business," which is verified daily. One may make a sweeping remark that interests a large community, yet no one takes upon himself to deny.

My mind is thus directed from seeing the circular of one of the large houses in your city, Messrs. Stewart & Co., as to this crop of cotton, and as yet have seen in only one or two of the many papers I see, any denial. The circular was gotten up for Europe, I think in May, and gave the information that the growing crop promised to be the largest ever known. Having loaned the paper out containing the article, I can not quote the language.

I have denied the fact in the *Delta*, published in New-Orleans, long enough to have been corrected by any Southern house of the same way of guessing, and now earnestly ask of you to permit me to deny in the positive the fact and to give *some facts, as are facts.* I know nothing of the house; it may be reliable and only guesses occasionally, or it may not be worthy of a planter's notice, but nevertheless, I have never known a wilder guess in all my life, unless when a certain gentleman went on to Washington City as a member of Congress, waiting there for his papers—*guessing* he was elected, when lo! the real member presented himself with his commission. Whether these gentlemen are interested in purchase or sale, I know not, but I *guess* I know they could not have guessed wider of the truth, even had they a wish to depress prices and then to buy. Now for the facts:

April 6, Ther. 31°, ice, sleet and hail last night.
" 7, " 32°.
" 12. Snowing fully two hours after daylight, and from near midnight.
" 23, Ther. 31°, ice.
" 24, " 35°.
May, 5, " 54°. Yesterday morn. 49°.
" 18, " 51°, 7 P.M., not above 53° all day, 51° at sun rise.
" 19, " 40°, 6 A.M.

I reside nearly east of Vicksburg, about lat. 32° 30′, about the center of the best cotton region. How much more unfavorable say 2½° north, I leave you to guess.

I never planted an acre of cotton over, before this year; did plant over 60 acres on the 22d and 23d of April, and should have doubled it, but risked—now I would have preferred that I had planted over 160 acres. Many of my friends living remote from protection of water, planted all cotton over, and some again and again, even to three and five times planting before they secured a stand. Now, up to May, where is the

man that had even a show for a crop of any size, should it be one half crop? Since that time, we have had rains and cold weather beyond any former experience of mine, and this is my twenty-seventh crop in Mississippi. Even in July, we have had a fire over one half the mornings, and blankets needed at night three fourths of the time. I learn from a large planter of Alabama, whom I saw to-day, that when he left there, June the 1st, his cotton was not up.

*Present prospects.*—The earliest bloom I had, and as early as any I have heard of near here, was on the 25th of June; the earliest before, was on the 27th of May, the latest I have any record of in 27 years was on the 13th or 14th of June. Cotton is smaller than I ever saw it before. I have seen larger cotton and more blooms on the 10th of June, than now.

What the crop may be I know not, nor would I venture now to say, but this I do say, if that house will only insure me the average crop for '57, that my crop on same land was in 1852, 1412 lbs. per acre, I will make them safe in any way they require, to $2000. This is no idle remark. I am willing to pay $2000 to insure my crop, as to pay $50 to insure my gin house for four months.

Yours, with esteem, M. W. Philips.

---

## Editorial Correspondence.

*Hadley, Mass., July 1st.*—The cultivation of broom corn has been for the last quarter of a century a great business in this region, and for the most of that time has afforded a profit considerably above the average of farming. The process is much the same as for Indian corn. Similar land is required. Manures suitable for Indian corn are favorable to this crop. Less, however, is required, the broom corn being a less exhausting growth, and more of the stalks, where not taken to the paper mill, being left in the field. On the alluvial soils of the Connecticut river, free, arable, but not the richest, seven loads of barn manure to the acre will insure a good crop of broom corn in a favorable season, and leave the land in pretty good heart for a succeeding crop.

But alas, for the broom corn! Other regions are competing for the profits; and the farmers of these parts have caught the tobacco mania. For some years past the profits of this disgusting weed have been quite seducing. It is a little amusing to see how some of the fathers, who a few years ago would have consigned tobacco and all who use it, over, we will not say to whom, are now rejoicing in the enormous profits of the last year's crop. But it is no strange thing to hear men denouncing others, and then doing the same thing *for good pay*. We would only suggest that the growers of the weed are

shrewder than the consumers; inasmuch as a pocket full of money is more desirable than a sallow skin, a nose turned into a chimney, a foul breath, dyspepsia and a swolen liver.

*Westfield, July 2d.*—This town has manufactured more whips probably than any other town not more than 200 years old. Its industry is of late turned very much to the growing of tobacco and the manufacturing of cigars. Puritanism itself has caved in. An agent of the *Homestead*, printed at Hartford, we learn, has promised $400 an acre clear profit on tobacco to all those who will take that paper. Whether the proprietors of that journal instruct their agents to tell great stories, is more than we know. But we were amused at learning how the device didn't take. Four hundred dollars an acre, said the agent to a rather fogyish friend of ours hereabouts. Too big talk for me, said our friend; never made but $200 an acre; can't take your paper. Said agent grappled with a sturdier farmer next time, one whom we have long known as manuring highly and getting great crops. His promise of only $400 an acre was met with astonishment. What do you mean, said this deep-ploughing, manure-stuffing tobacco grower; I have been getting $600 an acre; should'nt like to go back to $400; can't take a paper that talks of no more.

*Farmington, Conn., July 3d.*—We said in our last that we were exceedingly pleased with Allen's mower, as a piece of mechanism, which we should judge, by the manner in which it is got up, might work well, but that we had not seen it in operation. On the farm of Hon. John F. Norton, of this place, we have had the pleasure of seeing it work. The grass was stout; equal we judge to two and a half tons of hay to the acre. Much of it was badly lodged. But the machine, though drawn by horses not accustomed to it, and managed by a man then receiving from Mr. N. his first lesson in the business, worked to a charm, and cut the grass better than we could have believed it possible, in case of so heavy and tangled a crop.

*Port Jervis, N. Y., July 8.*—Having to choose between the heat of the city and the sun and dust of the country, we are again off. Port Jervis is a pleasant little place on the Erie Road, some ninety miles from New-York, grown suddenly, we believe, into being by railroad influences. The Fowler House in this village, by reason of its new and elegant building, its pleasant location, and the gentlemanly deportment of its keeper, H. Foster, Esq., might satisfy some of our readers, who like us, are willing for a while to forego the pleasures of city life.

*Binghamton, July 9.*—Here is one of our active growing villages; and to see how the agriculture of the region has improved since we

were familiar with it some eighteen or twenty years ago, does one's heart good. Our journal comes largely to this place, and has contributed no doubt, with others of a similar kind, to promote the improvements everywhere seen. Pine stumps were the bane of husbandry, but the farmers have given them hoist, at very considerable expense, but wisely, as we think. Many of them had extended their long enduring roots over nearly a rod, so that by removing them the owner adds about that extent to his field, and gives himself a chance to make straight furrows. There is abundant use for the stump puller in this region, but not in this only.

*Syracuse, July* 10.—Here we are, at this city, to be honored by the first trial of reapers and mowers, under the auspices of the U. S. Agricultural Society, Hon. Marshal P. Wilder, Pres. Before leaving, we hope to learn something concerning these important machines, which we may communicate for the benefit of our readers.—Ed.

## The Camel Experiment.

A Washington paper has an interesting item relative to the Camels in Texas, based on recent information. The animals are doing well, the experiment of their acclimation having thus far proved successful. Those first imported are now transporting supplies between St. Antonio and Camp Verdo. "Three little ones were born in March and are thriving, and five or six more births are expected. From the reports of the conditions of the animals, at present, and through the eleven months that the first importation have been on the Continent, we may regard all doubts as to their acclimation dissipated, and that so much of the experiment is a *fixed fact*. The only remaining intermediate point is the character of the stock that may be produced. For this, time will be required. The officers in charge are, however, sanguine that it will fully equal that of Asia Minor and Africa, and may, by proper attention, be more highly developed."

## Lime.

To receive the greatest benefit from lime, it must be kept as near the surface as possible. The reason is this; its weight and minuteness give it a tendency to sink; and after a few years of cultivation, a large portion of it will be found to have gone beyond the depth of its most efficient action. Hence it is advisable to spread it on the ground after ploughing; then harrow it well in, and allow it to remain in grass as long as good crops can be had. When the lime is settled down beyond the reach of the common plough, the sub-soil plough will prolong its effect, by enabling the atmosphere and the roots of plants to penetrate the sub-soil likewise.

Important Agricultural Matter will be found in Brevier type. It was received too late for insertion elsewhere.

# Horticultural.

FOR THE AMERICAN FARMERS' MAGAZINE.

## Horse Radish, Prussian Culture.

Mr. Editor:—Horse radish is found in almost every farmer's garden, yet I dare say very few, if any, know how to raise and cultivate the same. To the gardner I think it is known, but to the most of the farmers it is not. I think it, therefore, my duty to send you a prescription, the way I have seen it done in Prussia. I think it an excellent plan, and I follow the same with mine.

Take the longest roots you can find, (the young ones I mean,) rub them with a cloth up and down, so it takes all the fibre off. About one-half inch at each end should not be rubbed, as the lower end is to make the roots for the next years' setting, the upper the leaves. Plant them in rows about eighteen inches apart each way. Lay them in the ground in a slanting way. They are planted with a stick made for the purpose, crooked at the upper end. The stick is stuck in the ground in the above manner, pulled out, the root then put in the hole left, and then tightened as any other plant. The bed should be planted with the roots all in the same direction. They should never be planted straight down. Keep them free from weeds, and pull the heads up once in a while during their growth to keep the heads from rooting. If the heads, in spite of this, make root, cut them off. In the autumn dig them up by starting at the first row planted and digging a ditch two feet deep, to get every particle of root, as if there are any left in the ground, they will be a nuisance. When the first row is out take the next, throwing the ground in the ditch left from the first row, and so on till it is done. If the ground is rich or well manured, the roots, that is those planted last year, attain the size of a man's arm. The young roots which are grown out of the lower end should be sorted by taking the best for next years' planting. The old roots which are for use can be kept in cellar in the winter. They might be kept all the year by putting them in sand.

If the rows are planted north and south direction, they should be dug east and west.

Wm. K.

Bolivar P. O., Bolivar Co., Miss.

## Vegetable Garden.

Read the following reminders, from the *Horticulturist* for June, by William Sanders:

The beneficial effects of mulching to transplanted trees is well

known, and very generally practiced. Its effects in the vegetable garden are no less striking. The mowings of short lawn grass, rakings of leaves, &c., thrown around and over the roots of egg-plants, or between the rows of peas, and other crops, will be found of great service during dry weather. Previous to applying it, the soil should receive a deep hoeing or forking up; if covered immediately afterwards, surface evaporation will be retarded, and the bad effects from heavy rains dashing on the surface prevented. Green vegetable matter, when used as above, should be spread very lightly; otherwise injury may result from fermentation.

Thin out the rows of beets, carrots, parsnips, &c., as soon as the crops are fairly advanced; nothing is gained by defering the operation too long, but much loss if the plants are crowded, as they will grow weak and slender; thin them to stand six inches apart.

*Asparagus* beds ought to be kept clean. Young plantations should not be cut very severely, as it will weaken the plants. The green portion only of this vegetable is fit for use; there is no occasion to cut below the surface with a view of getting it white. It is strange that white asparagus should ever be brought to market, and stranger still, that horticultural societies should award it a premium in preference to equally well known green samples. Water, with salted rain water, in the proportion of two ounces of salt to a gallon of water; this is preferable to sowing the salt over the plants.

Pleasure Ground and Lawn.—Frequent mowing is necessary to preserve a neat lawn; mow it when damp and clean the grass cut thoroughly off with the patent grass rake.—Lawn mowing machines are now constructed which economize labor and leave a beautiful surface. Lately planted trees should be secured from swaying about in the wind; they will grow better if the soil round their roots is kept clear of weeds. Trees fairly established do not require this treatment. It destroys the harmony of the lawn when the grass does not grow close up to the stems of the trees and shrubs. For the same reason all grass edgings should be kept low; nothing is more unsightly than deeply cut edgings to roads and walks, although they should in all cases be well defined and neatly trimmed.—*Horticulturist.*

## A Small Field and a Large Yield.

Mr. Isaac Fairchild, keeper of the Eagle Hotel, at Cortlandville, N. Y., and cultivator of a ten acre farm, or rather garden, tells us that last year, on one-eighth of an acre of a deep alluvial soil, heavily manured, he grew 400 bushels of carrots; that they were sowed in rows nine inches apart, thinned to four inches in the row, the spaces being carefully filled, so as to leave no vacancies; and that although he ploughed but ten inches deep, the roots, owing to the richness of the soil, extended to twice that depth, and some of them more, actually measuring two feet in length, and from two to three inches through at the large end. Mr. F. does not claim that he saw the measurement—says that he took the statement of the men who harvested the crop, and thinks, what we very much suspect may be true,

that possibly they may have enlarged the number of bushels, by carelessly allowing the roots to fall crosswise into the measure—influenced perhaps by a desire to make as large a story as the case would admit. Now four carrots to the square foot, according to his mode of planting, would give 174,240 to the acre, making no allowance for vacant spaces; and if the size were such that 54.45 carrots, or about 54½, would fill a bushel, they would give 3,200 bushels to the acre, not less than 60 tons. But we are quite sure, that there is very little land on which carrots would grow so thickly and yet attain a good size; nor does Mr. F. commend this mode of cultivation. He only tried it once to see what could be done; and has this year planted his carrots in rows 18 inches apart, and is cultivating them by horse power, instead of hand, as last, believing that this way he will grow as profitable, if not as large a crop. He esteems carrots the very best of feed for milk cows; the best to fatten horses not at work; and better for working horses, given in part with oats, than oats alone.—Ed.

## The Flower Garden.

The warm weather has now fully come, every day adding to the trophies won from the soil of a most reluctant spring. Already, to those who have fulfilled the conditions, the flower garden begins to give back the small percentage of time and labor it has cost, with a principal rich in the glory of its many-colored gifts.

How kindred to our hearts seem the plants, upon whose culture we have bestowed careful and personal attention. We have planted the tiny seed, and, waiting in patience for its growth, done the little in our power to hasten the result, around which, next to the upgrowth and development of animal life, hangs the most inscrutable of mysteries. We have helped up, out of the cold, dark earth, the tender leaf, and unfolding bud, till rejoicing in the warm sunshine and airs of heaven, these flower children have stood around us, clothed in a beauty, and breathing a fragrance that led the thought, and lifted the worship to Him who is the Father of the blue-bell and violet, the lily and the rose, no less than of the soul that fills with adoring wonder, and delight, in the presence of those beauteous emblems of his goodness and power.

Even so, O parent, entrusted with the care of plants whose blooming is for eternity! see to it that no dew-drop of kindness, no smile of affection, no husbanding of natural goodness and health-giving resources, no pruning off of useless, or ruinous habits be wanting in your great life-work of unfolding, and perfecting those immortal flowers, the beauty and purity of whose being ought to be the incense, whereon your own daily life might ascend to the fountain of light and love.—*Wisconsin Farmer.*

"Oh! if there is one *law* above the rest
Written in wisdom; if there is a *word*
That I would write, as with a pen of fire,
On the unsullied temper of a child,
*'Tis human love.*"

# MECHANICS' GUIDE.

## Recent American Inventions.

### Salomon's Carbonic Acid Gas Engines—A Great Triumph.

In our fifth volume, page 211, (Oct., 1852,) we published a very interesting communication from our much-esteemed friend, Dr. Newman, now deceased, in reference to Prof. Salomon, and several very interesting experiments with his invention, the "carbon engine." It will pay well for re-perusal, especially in connection with the statement recently made, that the learned professor has at length completely succeeded in making a practical working engine of which carbon is the moving power, which for economy, simplicity, power, etc., is far in advance of the steam engine, and will work out a thorough change in this department of practical mechanics. These hopes and expectations may be more or less disappointed, but the present position of the matter is certainly such as to give very great delight to the persevering professor, and if capital for such operations is not freely and abundantly offered, if required by Professor Salomon, it will be a disgrace to the country. But perhaps we are too fast (or too slow) in this, for it may be that this hour of his need is already past, and he may make a similar reply to such offers, as was made by Dr. Johnson to the English nobleman, who offered to be his "patron" after his reputation had become so great and wide, that such kind offices were needed no longer. The Doctor's reply was the concentration of sarcasm. On this point we are informed that "for this fortunate result, Prof. S. acknowledges himself under obligations to some of our most intelligent and opulent citizens, who, becoming persuaded of the feasibility of his design, did not hesitate to aid him with their means and encourage him with their confidence, without which, notwithstanding his own close and sanguine application and unyielding energy, he may have failed to bring his labors to a prosperous termination, at least for some time to come."

We take the following account from *The Baltimore Republican*, and will, with unusual delight, set before our readers any further developments that may reach us, on this immensely important subject:

"Prof. Salomon calls his discovery the 'Sulph. Oil Carbonic Acid Engine.' It is now located in Cyprus alley, between Pratt and Lombard streets, where its operations have been witnessed by numbers of scientific and practical machinists, all of whom agree in pronouncing it a complete triumph of science and mechanical skill, and regard its destiny as the doubtless early supersedure of steam for the motor of vessels, railroad cars, manufactories, etc. The machine we saw was merely an experimental one, and, of course, is still susceptible of improvement. The engine differs in no material feature from an ordinary rectilinial or reciprocating steam engine, and is calculated for four-horse power.

"The motor is produced by a compound of de-sulphiated bi-sulphuret of carbon, coal-tar, and volatile, or fixed oil, which under certain influences of heat becomes powerfully expansive, and hence is derived the momentum. The fluid or gas, on being heated, passes into the cylinder, acts on the piston, and is then conveyed through pipes into the condenser. Thence it is again returned to the heater, and again sent on its errand of imparting motion to the engine, to again be returned by the way of the condenser, thoroughly renovated and ready for

further labor; and so on it continues until wasted away by such leakage, etc., as may not be prevented.

The heater into which the fluid or gas is introduced is submerged in a cistern of oil kept hot by a gentle fire, and in this the gas expands, gains its power, and passing to the cylinder, acts on the engine to be carried off and condensed as we have described, thus keeping up a constant active force, without the most remote danger of accident or explosion. The apparatus and all its appliances are without complication, easy to be understood, and at the same time not at all liable to disarrangement.

The cost of the fluid is about ten cents per gallon, and with careful attention, about eighteen gallons, it is said, will serve an engine of the capacity of the one now in use for at least an entire year. The engine alluded to has a piston of twelve inch stroke and six inch crank. It was worked up to ten horse power under the brake of a wheel three feet three inches in diameter, with a rim of two and a half inches, which was pressed between two bars, each having attached a friction block of seven and a half inches in length and two and a fourth inches wide, and under a weight of one hundred and twelve pounds. In this condition, the wheel easily made eighty revolutions per minute. The heat required was only 236° Fahrenheit, which produced 60 lbs. working power, under exhaustion, and an atmospheric pressure of 15 lbs. adverse, which should be added to the active agent. Steam, in the same proportions and under similar circumstances, with 267° Fahrenheit, only yielded 25 lbs. to the square inch, and, when tested, the engine moved but slightly.

An elaborate report of a series of experiments made with this apparatus, has been prepared for publication by Wm. H. Shock, Esq., United States Naval Engineer, which we would gladly give in our columns, did space permit. His experiments were made for the following purposes, viz.: First—To determine the pressure in the boiler at different temperatures of the oil-bath. Second—To ascertain the capacity of the boiler to supply the steam engine, and to test the capacity of the condensing apparatus. Third—To ascertain the declining ratio of temperature and pressures—the pressure recorded being due exclusively to the heat in the oil-bath, as the fire was permitted to burn out at the commencement of the trial. The thermometer used was Fahrenheit's; the engine, an ordinary condensing one, with four inches diameter of cylinder, and twelve inches stroke. The fuel was coke and pine wood mixed. Mr. S.'s experiments were all eminently successful. They commenced on the 23d of May last, and continued till June 6th, and were so thorough as to leave no doubt of the capacity of this invention to perform all which is claimed for it. The engine was at work on Friday in the presence of a large number of persons, some of whom were well versed in machinery, and all agree in confirming the opinion set forth above, that this is truly the invention of the age.

---

## American Cutlery.

We took occasion, some months since, to censure with some severity a circular of New-York hardware dealers, who took ground against our own manufactures, and forbade, on penalty of their displeasure, the use of a stamp of the name and residence of the maker, on such wares. It is not a little singular that at the same time the English were actually using, fraudulently, and to a considerable extent, these same American stamps. In Germany the same thing is done, to a still greater extent. It is also said that American mechanics use more of English steel of the first quality, in our cutlery shops, than is used in England. Of that known and marked as Hoop L, we use ten times as much as is used in England, though they manufacture fifty times as much cutlery as we do. A writer whom we all know as of high authority, Mr. Fleischman, says: "The manufacturers of cutlery in the United States have far surpassed those

of the old world in the manufacture of tools, and that, not merely in the excellence of the metal used, but especially in the practical utility of their patterns, and in the remarkable degree of finish of their work." With such evidence of success, the American artizan can not fail to make strenuous efforts to reach the highest possible degree of skill in his profession, and he will thus acquire great honor both for himself and the country. Further evidence in this subject is found in the following paragraph, which we find in an exchange:

AMERICAN MANUFACTURES ABROAD.—An Illinois plough-maker, Mr. Deere, has recently received an order from Naylor & Co., steel manufacturers of England, for three ploughs, of different kinds, for their own use in England. Mr. Deere made an order from the same firm, eight years ago, for German silver and cast steel, and has since made so many orders that the manufacturers felt a natural curiosity to know the purpose to which their customer applied it. It is something to talk about, that English material is sent to this country and to the "Far West," to be manufactured into agricultural implements to return again in its changed form to plough up English soil.

## Architecture of the Capitol Extension.

THIS great work proceeds slowly, but well. The new dome will be a splendid tribute to and evidence of American skill. It is divided into four sections—the first occupied by thirty-six columns of cast iron, twenty-seven feet high, and about three feet in diameter at the top. The foundation of the dome is the circular wall of the rotunda, carried up 24 feet above its interior cornice, and surrounded above the roof of the main building by an octagonal entablature and balcony. From the cast iron brackets embedded in this circular wall are to rise a double row of hollow cast iron columns to the height of 27 feet. These columns rest on a foundation consisting of cast iron plate, which again rests on a circular wall, belted, girded, cramped, and compacted into a mass of solid matter, forming, as it were, but a single body. On these columns, (which are hollow and fluted, and about an inch thick,) when in position will be placed a ring to form the foundation for a superimposed section of pilasters, less in size then the columns, but agreeing with them in number, on which will be strong panel work, constituting a third section or attic. The fourth section is the dome or cupola proper, and differs from other domes in having an elliptical instead of a circular section. Above the cornice of the rotunda, on the interior of the foundation wall of the dome, will appear a continuous belt of sculpture, 300 feet in length, representing the history of America.

The whole structure (the dome) will be of cast iron and glass, 124 feet in diameter at the base of the columns, and rising above the main building more than 200 feet. It is surrounded by stout circular plates of iron, bearing an altar-like structure girt with fasces, all of iron, supporting a globe, around which will pass a belt inscribed with the motto, "E Pluribus Unum." The apex consists of a lantern 52 feet high, 17 feet in diemeter, surmounted by a female figure of the goddess of liberty, 16½ feet high, of bronze, erect, with sword and shield, and a fillet studded with stars round her forehead, the work of Mr. Crawford.

The dome is to be ascended by spiral stairs between its outer and inner shell, or its roof and ceiling. There will occur frequent landings or balconies, affording both external and internal views.

L of C

## Transatlantic Cable.

The process of this enterprise is uninterrupted. At the last accounts several hundred miles of it were already on board the ship Niagara, and her whole quota of this unique cargo would soon be complete. The cable is placed in five coils of a conical shape, on the floor of the hold, and also of all the decks, (orlop, berth, and spar,) both before and aft midships. These coils are about twenty-five feet in diameter at base, and from three to four and a half feet high; and weighing from about 90 tons to 173. The coils lie over and under and around the hatches. They are wound upon a cone of hollow plank. It will be placed on board the Agamemnon in a single coil. The cable weighs about a ton to a mile, and is 2500 miles in length. Instead of one copper wire, it consists of seven, "each about as thick as a pin." Eighteen strands of iron wire, around these, form a protection or covering, which is within the insulating or gutta percha wrapper, which forms the outer part of the cable.

---

## Breckenridge Coal Oil Company.

Our readers will recollect what we have so lately written in reference to the value of coal oil and coal gas, and also of Paraffine for candles. In looking over the annual report of the company, the name of which forms our caption, we notice several statements which are of great importance in reference to these immense sources of profit and of convenience. It appears that "the Boghead coal of Scotland, the Albert coal of the Province of New-Brunswick, and the Breckenridge coal," are "the only coals yet discovered peculiarly adapted for the production of oils." On page 558 of our March No., we stated that the Boghead cannel was the richest coal known for the production of gas, and that Scotch Parrot coal was the next. We see that the Breckenridge Company claims "preëminence" for their coal in the production of oil, though the grounds of the claim are not given. It is no doubt very valuable, and probably the richest, for this purpose, in this country.

In our April number, page 619, we presented some of the statistics of this company, and gave our readers to understand, as we supposed, that we looked for very valuable results from it. We present below a few short extracts from their report, in confirmation of our opinions there set forth.

"Hitherto, sperm oil has been unapproachable in its adaptability to lubricating and burning purposes—now it is equalled by coal oil, and it is only reasonable to expect that, with the further developments in their manufacture, coal oil will leave this article far behind. In the higher branches, such as the finer portions of intricate machinery, and in cotton spinning, coal oil has already the decided preference, and before long, linseed oil, which is yet considered essential as a paint oil, will have to yield its place to this new rival. The lighter portions of this production are not to be overlooked. Benzole and Naphtha are now becoming known, and they only require to be properly known to be appreciated as the perfection of light, and of solvents. Paraffine, too, deserves your attention. Possessed of properties which place it on an equality with the very finest spermaceti in the manufacture of candles, it contains others, which render it valuable to the artists in the production of various works of rare beauty and elegance. . . .

"The question has frequently been asked, if our supply of coal warrants the

erection of extensive works for its manufacture into oil—if we should not soon run out of coal, were we to consume, say a hundred or more tons per day in these works? It will be gratifying to you to know that, although this quantity were consumed daily, according to the statement given under oath by Professor Silliman and his associates, commissioners appointed by the Governor of the State of Kentucky, to estimate the extent of the coal lands belonging to the Company, we have a supply that will last over 570 years, so that instead of running out of coal, we may increase the manufacture of oils to any conceivable extent, and have a supply for many generations."

---

## The Victoria Bridge, Montreal.

THE new bridge that is to cross the St. Lawrence, near Montreal, will be one of the architectural wonders of the day. It is to cross the river from Point St Charles to the South Shore, the distance being a little less than two miles. It is to be on the tubular principle; there will be a track for railroad cars in the center, and on the outside of the tube will be, on each side, a balcony, with a foot-path for passengers. The bridge will rest on twenty-four piers and two abutments of limestone masonry, the center span being 330 feet long, and 60 feet high from summer water-level, descending at either end at the rate one in 130. It is to be built, in every respect, in the most substantial manner, and when finished will cost $6,250,000.

---

## Clough's Traps for Insects.

A VERY learned friend once said to us that the invention of friction matches was one of the most useful inventions of the age. He who will defend us from the inroads of barbarian insects deserves to be placed in the same niche in the temple of fame. Mr. Clough, 489 Broadway, thinks he is this happy man. His fly and mosquito trap and coakroach trap are certainly full of promise. For after standing, when properly charged, they are often found *full of flies.* Those who have tried them speak highly of them. We have seen evidence of their efficiency. Price 25, and 40, and 50 cents each.

---

## Demorest's Miniature Gas Stoves & Dress Patterns.

OUR readers have not forgotten what we published in regard to Demorest's pattern of these useful articles. They might be called "Diamond Gas Stoves," with far less impropriety than in the case of California Quartz, for this term is technically applied by printers to a very fine type, and it may also indicate a great value in a small compass. Mr. D. has sold immense numbers of them. The same establishment, 375 Broadway, also supplies Premium Dress Patterns for twenty-five cents, which will save a housekeeper perhaps as many dollars. By these patterns any dress may be cut at home, and made up in the family. Full sets of trimmed patterns, of any style, "including cloak, mantilla, sack, basque," etc., etc., etc., costs but three dollars. This enables any one to do all her work at home, as long as the fashion lasts. It is a "capital institution."

## To make Hard Candles of Soft Tallow.

To TWELVE pounds of tallow take half a gallon of water, to which add three tablespoonfuls of pulverized alum, and two ditto saltpetre, which heat and dissolve; then add your tallow and one pound of beeswax; boil hard altogether, until the water evaporates, and skim while boiling. It should not be put in your molds hotter than you can bear your hand in. The candles look much nicer when the wicks are not tied at the bottom. It is not only a disagreeable task to cut the wicks off, but it injures the mold. Never heat your molds to draw your candles in cold water.

Tallow from beeves fed on corn or grain, is much softer than when fed on grass or clover. Therefore the tallow from grass-fed cattle should always be selected for summer use, and the candles will always be hard with the addition of very little alum and beeswax. In very cold weather much less alum must be used, or they will crack so as to fall to pieces sometimes; and a third more of each should be used in warm weather if the tallow is very soft. With a little management you can always have hard tallow for summer use where you make all your own candles.—*Country Gentleman.*

## To Render Textile Fabrics Waterproof.

TAKE 1 pound of wheat bran, and 1 ounce of glue, and boil them in 3 gallons of water in a tin vessel for half an hour. Now lift the vessel from the fire, and set it aside for ten minutes; during this period the bran will fall to the bottom, leaving a clear liquor above, which is to be poured off, and the bran thrown away; one pound of bar soap cut into small pieces is now to be dissolved in it. The liquor may be put on the fire in the tin pan, and stirred until all the soap is dissolved. In another vessel one pound of alum is dissolved in half a gallon of water; this is added to the soap-bran liquor while it is boiling, and all is well-stirred; this forms the waterproofing liquor. It is used while cool. The textile fabric to be rendered waterproof is immersed in it, and pressed between the hands until it is perfectly saturated. It is now wrung, to squeeze out as much of the free liquor as possible, then shaken or stretched, and hung up to dry in a warm room, or in a dry atmosphere out-doors. When dry, the fabric or cloth so treated will repel rain and moisture, but allow the air or perspiration to pass through it.

The alum, gluten, gelatine, and soap unite together, and form an insoluble compound, which coats every fibre of the textile fabric, and when dry repels water like the natural oil in the feathers of a duck. There are various substances which are soluble in water singly, but when combined form insoluble compounds, and *vice versa*. Alum, soap, and gelatine, are soluble in water singly, but form insoluble compounds when united chemically. Oil is insoluble in water singly, but combined with caustic soda or potash it forms soluble soap. Such are some of the useful curiosities of chemistry.—*Scientific American.*

FOR THE AMERICAN FARMERS' MAGAZINE.

## The Mechanical Problem in April Number.

CLINTON, Mass., June 24th, 1857.

MESSRS. PLOUGH, LOOM, AND ANVIL:—Your correspondent, G. W., takes exception to my solution of the "Mechanical Problem" by saying that the point at issue is taken for granted. All that can be said to be taken for granted is, that the inference which I drew from my demonstration, was a legitimate result of that demonstration, and thus, in my opinion, a proof of the point at issue; which

result is, in brief, that the only power actually applied to propel the boat, consists of the physical force of the man in the boat, who is pulling upon the rope, with his feet braced against the side or bottom of the boat, and the other end of the rope made stationary on the shore, by being attached either to a post or man, either of which must be supposed to pull upon the rope precisely as hard as they are pulled upon, and no harder; for if the force of the man in the boat is more than counterbalanced by the man on shore, our nautical hero is pulled overboard, and the experiment ends. The case is the same with the two boats supposed by G. W., with a man in each, and their ropes attached to a post in the center of the pond. We will suppose the man in the boat *A*—for convenience—draws against the post with a power equal to fifteen pounds; the post withstands this power by an equal reäcting force. The man in the boat *B* also pulls against the post with a power of fifteen pounds, which is also reäcted by the post; and the power of these two men being applied in opposite directions, the action of each neutralizes that of the other in their effect upon the post, so that the result is necessarily the same, whether the lines are attached to the post in the center, or "detached from the post, and fastened to each other."

Having eliminated the post as an unnecessary quantity, we will proceed with the solution. The men are now pulling against each other, and obviously, *must* pull with equal force, or the weaker must yield and get a ducking. The man in the boat *A* applies the supposed power, which produces a given velocity to his own boat, and, on the principle of the equality of action and reäction, it is immaterial whether the other end of his rope be attached to a man or post in the other boat. And now the conclusion is, that all the difference between the man in the boat *A* pulling against boat *B*, and pulling against a post on shore is, that in the former case, boat *B* yields to the power applied, with a velocity equal to that of boat *A*, and makes it necessary to haul in slack rope to double the amount of his own motion, while in the latter case, the post on shore maintains its position, and the slack rope exactly measures the motion of the boat. Will G. W. please "devise a way" for arriving at a different conclusion?

Yours, P. W. F. C.

## Recent Patents,

[ISSUED FROM THE U. S. PATENT OFFICE, FROM JUNE 2 TO JUNE 30, 1857.]

### Agricultural.

Self-loading cart, J. S. Brow, Washington, D. C. Combination of revolving elevator and scraper.—Grain Separator, Elihu Doud, Oshkosh, Wis.—Self-acting Wagon Brake, M. C. Chamberlain, Johnsonsburgh, N. Y.—Portable Fence, Wm. Morrison, Carlisle, Pa.—Stump Extractor, Peter Traxier, Scottsburg, N. Y.—Cheese Hoop, C. P. S. Wardwell, Lake Village, N. H.—Mould board for reversible Plows, Henry S. Akens, Berkshire, N. Y.; composed of rods or bars, susceptible of torsion, or of being twisted to the right or left, &c.—Harvester, Nicholas Clute, Dunnsville, N. Y.—Butter Workers, Chas. W. Gage, Homer, N. Y.—Corn Planter, Ives W. McGiffey, Buffalo, N. Y.—Seed Planter, Solomon T. Holly, Rockford, Ill.—Cutting apparatus of Harvesters, M. G. Hubbard, Penn Yan, N. Y.—Plow, C. B. Ingersoll, Morris, Ill.—Plow, E. D. & L. W. Legg, Speedville, N. Y. Combination of adjustible cutter and reversible mould board.—Sowing grain in drills, Frederick Moehlmann, Belleville, Ill.—Corn Planter,

Wm. T. Pepyer, Rising Sun, Ind.—Same, Sylvanus Richardson, Jericho, Vt.—Gang Plows, Joseph Sutler, St. Louis, Mo.—Cultivator Plows, Micajah Tolle, Newport, Ky.—Excavating Machines, Alonzo Taggart, Warrentown, Mo.—Mowing Machine, J. B. Wardwell, Methuen, Mass.—Cleaning rice, John F. Taylor, Charleston, S. C. The kernels are rubbed together in a screw cylinder.—Earth Excavator, Curtius Colby, Wilson, N. Y.—Raking attachment for Harvesters, John McIntosh, Geneva, Ill.—Harvester, D. S. McNamara, N. Hoosick, N. Y.—Fences, James Moore, Pittsburg, Pa.—Lozenge formed slats, and the alternate twisting of the wires between the slats.—Frame for combined mower and reaper, J. A. Moore, and A. H. Patch, Louisville, Ky.—Chilling Plowshares, James Oliver and Harvey Little, South Bend, Ind.—Farm Gates, Wm. Sherwood, Beloit, Wis.—Raking Apparatus, for Harvesters, Daniel C. Smith, Tecumseh, Mich.—Harvester, C.T. Stetson, Amherst, Mass. Mode of raising and lowering the sickle of harvesters.—Harvester, Henry D. Hammond, Batavia, N. Y.—Harvesting Machine, John K. Harris, Allensville, Ind.—Self-acting rakes for Harvesters, S. T. Lamb, New-Washington, Ind.—Automatic rake for Harvesters, Joseph H. Manning, Philadelphia.

### Metallurgy.

Holding the bit in the brace, Geo. Benjamin, Avoca, N. Y.—Grooving Stove Pipe, Charles Bigelow, Hastings, Min. Ter.—Making horse-shoe nails, Calvin Carpenter, Jr., Providence, R. I.—Making wrought nails, Smith Gardiner, New-York.—Nail Machine, E. W. Scott, Lowell, Mass., and A. M. George, Nashua, N. H.—Wrench, Edward J. Worcester, Worcester, Mass.—Nut Machine, Samuel H. Whittaker, Cincinnati, O.—Tongueing and grooving Hand Plane, Porter A. Gladwin, assignor to himself and Thos. F. Caldicott, Boston.—Forging Horse-shoe nails, Robert Cook, assignor to himself and Samuel Norton, South Abington, Ms.—Screw Cutter, James M. Evarts, Westville, Ct.—Bending Sheet Metal Pans, E. A. Smead, Tioga, Pa.—Wiring Tin-pans, by same.—Screw wrench, G. C. Taft, assignor to A. W. Mason, Worcester, Ms.—Keeper for Locks and Latches, Andrew Patterson, Birmingham Pa., assignor to J. H. Jones, Pittsburgh, Pa.—Saw set, Jacob Erdle, West Bloomfield, N. Y.—Manufacture of Iron, Wm. Kelly, Lyon Co., Ky.—Straightening Knife-blades, H. Pierce, Claremont, N. H.—Enameling Iron pipes and Hollow Ware, Edward Pierce, Philadelphia.—Hardening Axes, &c., J. N. Rockwell, Napanock, N. Y.—Candlesticks, Timothy Rose, Courtlandville, N. Y.—Taps and Dies for cutting screws, Ira A. Richard, assignor to Silas Stevens, East Brookfield, Mass.—Boring Mill, Wm. Sellers, Philadelphia.—Making bolts and rivets, Joel R. Bassett, Cincinnati, O.—Machine for riveting boilers, Sylvester Bennett, New-Orleans.—Iron Pavements, for streets, Geo. W. Bishop, Brooklyn, N. Y.—Making Horse Shoes, Henry Burden, Troy, N. Y.—Horse Shoe, Wm Cooper, Brooklyn, N. Y.—Journal box for shafting, Daniel Taylor, Carbondale, Pa., a brass lining embodying the latter being cast upon the former.—Die Stock, James Teachout, Waterford, N. Y.—Permutation Lock, Frank G. Johnson, Brooklyn, N. Y.—Iron truss frames for bridges, Francis C. Lowthup, Trenton, N. Y.—Lock, Ludwig Baier, assignor to Joseph Lippencott and Wm. C. Barr, Pittsburg, Pa.—Strap Pillow block for Shafting, Geo. H. Reynolds, Medford, Mass., assignor to himself and D. B. Hinckley, Bangor, Me.—Hob for cutting screw cutters, G. C. Schneider, Washington, D. C.—Making cast iron malleable, A. K. Eaton, New-York.—Screw Cutters, J. M. Evarts, Westville, Conn.

### Fibrous and Textile Fabrics.

Making paper, Edward B. Bingham, Brooklyn, N. Y.—Coloring yarn on the bobbin, James Thompson, and W. P. Wakelee, New-Hartford, N. Y. The use of a vacuum, to facilitate the absorption of coloring matter.—Sewing Machine, Elias Howes, Jr., Cambridge, Ms., and Wm. R. Bliss, Boston.—Same, William Sage, Durham Center, Conn., assignor to Henry Sage, Berlin, Conn.—Preparing India Rubber cloth, Charles Winslow, Lynn, Ms.—Roller Temple for looms, Warren W. Dutcher, Milford, Mass.—Sewing Machine, Daniel Harris, Boston, Mass.—Ladies' Skirts, E. F. Woodward, Brooklyn, N. Y., a spiral stiffener, &c.—

Knitted Fabrics, Joseph Vickerstiff, assignor to Martin Landenberger, Philadelphia, a new article, a fabric, knitted with threads of different colors, and composed of two separate thicknesses, interlocked at intervals, as required, by transposing the threads, so that both sides shall present a plain uninterrupted surface of loops.—Blotter, R. G. Allerton, New York, a convex surface with a handle, to be used by a single rocking motion.—Manufacturing felt cloths, Thos. B. Butler, Norwalk, Ct.—Carpet Fastenings, David N. B. Coffin, Jr., Newton, Mass. A screw with a head on one side of its axis, so that a turn half round will release the carpet.—Drying pasteboard, Patrick Clark, Rahway, N. J. Heated hollow tables, one above another.—Rope Machine, Wm. R. Dutcher, Lansingburgh, N. Y.—Camp Tents, Benjamin Hinckley, Troy, N. Y. The rafted frame is hinged, in sections, so that the frame can be folded for convenient carrying.—Sewing Machine, Daniel Parris, Boston.—Machine for folding paper, James F. Weeks, Columbus, O.—Carpet Bags, Joseph Zepfel, assignor to himself and John B. Radley, New-York.

### Chemical Processes.

Covering insulated wire with lead or other ductile metal, Samuel C. Bishop, New-York.—Making Lampblack, J. A. Roth, Philadelphia.—Brine Evaporator, Charles W. Atkeson, Henderson, Ky.—Condensing apparatus for salt and gasses, J. C. F. Solomon, Baltimore, Md.—Refrigerator, J. C. Schooley, Cincinnati, O.—Preparing liquid Rose Pink, John W. Perry, assignor to James W. Gates, Boston.—Separating oil from steam, Robert Hill, Roxbury, Mass.—Electric Telegraph, Harrison G. Dyer, New-York.—Starch from Maize, Wm. Watt, Belfast, Ireland. The corn is first steeped, whole or broken, in water, at a temperature of 70° to 140° F., the water being changed several times, or applied in continuous streams, it is then ground or "levigated" with water at 70° to 140°. The starch is then separated by process as described.—Smelting Furnace, Charles C. Alger, Newburgh, N. Y.—Condensing liquid in gas main pipes, John Walton, Louisville, Ky.—Defecating cane juice, Leonard Wray, London, Eng.

### Calorifics.

Steam Heating Stove, Asa Blood, Norfolk, Va.—Bakers' Oven, John Chilcott, Baltimore, Md.—Solar Lamp, Joseph Hassell, Brooklyn, N. Y.—Coal Stove, John B. Kohler, Philadelphia.—Gas Generator, Augustus A. Hayes, Boston, Mass.—Gas Burner, John C. Walsh, Lockport, N. Y.—Foot Stove, J. W. Lefferts, Brooklyn, N. Y. Heated by a lamp.—Fire grates, or lining of fire pots, Daniel H. Dean, Lowell, Mass., assignor to Wm. J. Coggshall, Fall River, Mass.—Gas Stove, Patrick Mihan, assignor to himself and Robert F. Fitts, Boston.—Gas Generator, Napoleon Aubin, Albany, N. Y.—Vapor Burner, Horatio Fairbank, South Brookfield, Mass.—Fountain Lamp, Henry W. Adams, New-York.—Steam Radicator, for heating apartments, J. H. Chester, Cincinnati, O.—Gas Regulator, John H. Cooper, Philadelphia.—Street Lantern, John Reese, and C. N. Tyler, Washington, D. C.—Gas Generator, J. W. Smith, Washington, D. C. Gas burner, Asa D. Gates, Binghamton, N. Y.

### Steam and Gas Engines.

Guiding and cushioning paper valves, Joseph Hyde and Wm. Stearns, Wilmington, Del.—Damper regulators for steam boilers, Patrick White, Brooklyn, N. Y.—Steam pressure gage, Joseph L. Eastman, Boston, Mass.—Valve connections for Steam Engines, B. L. Phillips, Providence, R. I.—Valve Gear for steam engines, Samuel Swartz, Buffalo, N. Y.—Gas generator, E. W. Whitehead and J. L. Conklin, Newark, N. J.—Steam pressure gage, J. H. Miller, and John Kailey, assignors to themselves and John Danner, Canton, O.—Vane governor for steam engines, &c., Francis Gustine, Medford, Mass.—Safety steam boiler, W. G. Pike and Isaac R. Scott, Waltham, Mass.—Steam boiler, Harry Whitaker, Buffalo, N. Y.—Steam Whistle, Sylvester W. Warren, assignor to himself and Dexter N. Force, Brooklyn, N. Y.—Cylindrical Throttle Valve, James H. Simmons, Erwin, N. Y.—Valve Gear for Steam Engines, Sidney Maltby, Dayton, O. The link and hook motion, in the reverse cut off and lead of

the valve are dispensed with, and a direct attachment to the wrist of the engine crank is substituted.—Metallic Packing for Steam Pistons, Daniel Lasher, Brooklyn. N. Y.—Valves in Steam Cylinders, M. G. Stacy, assignor to John W. Way, Flemington, Ga.—Slide Valve for Steam Engines, Thomas Winans, Baltimore, Md.

### Navigation and Maritime Implements.

Steering apparatus for ships, Phineas Smith, Patchogue, N. Y.—Rudder, R. S. Harris, Galena, Ill. An outer or second rudder, attached to and working in the first rudder, with a short tiller, held and worked by stationary chains and ropes. Propellor canal boats, G. W. Swartz, Buffalo, N. Y.—Propelling vessels in shoal water, J. W. Wetmore, Eria, Pa.—Reducing Topsails, Thomas Batty, Brooklyn, N. Y.—Ships' Windlass, J. Peevy and Abraham Sanborn, Bangor Me.—Ships' Capstances, Robert Dunbar, and John F. Robertson, assignors to the Buffalo Eagle Iron works, Buffalo, N. Y. A new mode of imparting a variable motion to the capstan.

### Civil Engineering and Architecture.

Catch for doors, Jeremiah M. Crosby, Norwalk, O.—Roofing Machine, J. B. Driscole, Knoxville, Tenn.—Hanging Doors, Albert W. Morse, Eaton, N. Y.—Laths for buildings, John L. Brabyn, New York.—Constructing Stores, W. L. Johnson, Peytonsville, Tenn.—Excavating Tunnels, Charles Wilson, Springfield, Mass.

### Land Conveyance.

Repairing R. R. Bars, Lyman Beebe, and Geo. F. Smith, Michigan City, Ind. Railroad switch dock, Wm. L. Cawthro, Harper's Ferry, Va.—Carriage Brake, Geo. Hanck, Mechanicsburg, Pa.—Carriage Wheel, J. D. Sarven, Columbia, Tenn.—Setting tires on wheels, John H. Williams, Pleasant Hill, O.—Railroad Snow Excavator, S. G. Ludlum, Oyster Bay, N. Y.—Ventillating Vault, and platform light, John C. Wolvin, assignor to Geo. Peckham and himself, New York.—Central draft joint of carriages, Luther O. Rice, Caistorville, C. W.—Whiffletree hook, Anthony Cooley, Paw Paw, Mich.—Brake for Wagons, Hugh Slater, Auburn, N. Y.—Carriage Top, R. S. Jennings, Waterbury, Ct.

### Hydraulics and Pneumatics.

Basin Faucet, Wm. C. Marshall and Horace W. Smith, Hartford, Ct.—Rotary Pump, Robert Ramsden, South Easton, Pa.—Method of increasing Hydrants, William Bramwell, New-York, assignor to Samuel P. Ayers, New-Rochelle, N. Y.—Valvular arrangement for Basin, and cocks, Edward G. Bunham, assignor to himself and Henry A. Chapin, Springfield, Mass.—Hydrant, Joel Bryant, Brooklyn, N. Y.—Elevating Water, by compressed air, Archibald Thompson, Detroit, Mich.—Faucet, D. N. B. Coffin, Newton Center, Mass.—Valvular arrangement for Faucets, &c., Edward Hamilton, Chicago, Ill.—Pump, W. H. Harrison, Philadelphia.—Hydrant, G. P. Ferrine and J. E. Boyle, Richmond, Va.—Attaching air chambers to Pumps, Charles N. Lewis, assignor to Geo. C. King, Seneca Falls, N. Y.—Water Meter, Peter H. Niles, assignor to himself and Alfred Douglass, Jr., Boston.—Blast Blower, John Brough, Aurora, Ill.

### Grinding Mills, and Mill Gearing.

Automatic Fans, Lawrence Rebstock and N. Reimel, Philadelphia.—Grinding Mill, Ezra Coleman, Philadelphia.—Distributing apparatus of Flouring Mills, Alfred T. Clark, Lancaster, Pa.

### Lumber, and Tools and Machines for Preparing it.

Miter Box, Geo. L. Chapin, Perrysburgh, N. Y. The saw may be so guided as to cut at any desired angle.—Preparing hubblocks for the Lathe, Lovett Eames, Kalamazoo, Mich.—Wheelrights' Machine, E. N. Kilpatrick, Byhalia, Miss.—Machine for felling trees, Elliot F. Miller, Chelsea, Mass.—Shield and Guide for circular saws, G. W. Rodeboy, Milwaukie, Wis.—Adjusting circular saws, obliquely to their shafts, G. R. Scriven, Philadelphia.—Automatic Saw Mill Blocks, Hiram Wells, Florence, Mass.—Stock for Bench Planes, Joel Bryant,

Brooklyn, N. Y.—Cork Machine, Edward Conroy, South Boston.—Making Axe Poles, Richard H. Cole, St. Louis, Mo.—Portable Steam Sawing Machine, S. R. Wilmot, Watertown, Conn.—Holding and adjusting plane irons in their stocks, W. W. Shipman, Lowell, Mass.—Basket handles, Anthony Faas, Philadelphia.—Picker sawing machine, John Haw, Old Church, Va.—Sawing Mill, J. G. Kennedy, Cincinnati, O.—Boring Machine, L. B. Lloyd, Warwich Township, Pa.—Finishing brush handles, Thomas Mitchell, Lansingburgh, N. Y.—Securing and adjusting plane irons in their stocks, Wm. Stoddard, Lowell, Mass.—Bench Plane, Thomas D. Worrall, Lowell, Mass., assignor to Thomas F. Caldicott, Charlestown, Mass.—Mortising Machine, H. B. Smith, Lowell, Mass.—Adjustible fender posts for Saw Mills, Henry Harpold, Racine, O.—Sawing machine for felling trees, Matthew Ludwig, Boston.—Cross cut sawing apparatus, Henry F. Wilson, assignor to himself and Henry B. West, Flemington, Ga.

### Leather, Tanning, etc.

Manufacture of boots, James Scrimgeour, Brooklyn, N. Y. So cutting out the leathers that they do not require to be crimped—Pegging boots and shoes, B. F. Sturtevant, assignor to himself and Elmir Townsend, Boston.—Deplating compound for hides, A. K. Eaton, New-York.—Splitting leather, Dexter H. Chamberlain, West Roxbury, Mass.—Scouring and Setting leather, Peter E. Hammel, Pulaski, N. Y.—Machine for skiving boot counters, Wm. Butterfield, Boston, and Bradford Stetson, Uxbridge, Mass., assignors to themselves and Elmer Townsend, Boston.—Polishing raw-hide whips, Eugene Blattner, Philadelphia.

### Household Furniture.

Paring, coring and quartering apples, Charles F. Bosworth, Petersham, Mass.—Mop-head, E. P. Thompson, Worcester, Mass.—Invalid Bed Elevator, D. Stringham, Dunham, New-York.—Chair for invalids, James G. Holmes, Charleston, S. C.—Bedstead, Peter Hinds, Kendalls' Mills, Me.—Spring bed bottom, Geo. W. Dow, assignor to himself and Walter F. French, Lynn, Mass.—Elastic Loop for bedstead slats, Charles Robinson, Cambridgeport, Mass.

### Arts, Polite, Fine, and Ornamental.

Rounding and backing books, Theodore Bergner, Philadelphia.—Card printing press, Charles E. Emery, Canandaigua, N. Y.—Melodeon, Wm. Evans, Lockport, Ill.—Constructing watch and locket rings, Henry A. Phillips, Providence, R. I.—Power printing press, Jedediah Morse, Canton, Mass, assignor to the S. P. Ruggles power press manufacturing Co., Boston, Mass.—Card printing press, Franklin & Bailey, Boston, Mass.—Motion for preserving rolling contact, &c., Geo. P. Gordon and Frederick O. Degener, New-York. Adapted to type and lithographic presses, &c.—Printing press, F. L. Bailey, Boston.—Caligraph, Charles Thurber, Worcester, Mass.—Background for photographs on glass, J. W. Wykes, Wheeling, Va.—Printing Ink, George Matthews, Montreal, C. E.

### Fire Arms, &c.

Breech loading fire arms, Gilbert Smith, Buttermilk Falls, N. Y.—Same, John Schenkl, Boston.—Fire arms, Jacob Shaw, Jr., Hinckley Township, O.—Cartridges, Gilbert Smith, Buttermilk Falls, N. Y.

### Surgical and Medical Instruments.

Uterine Supporters, W. E. Cooke, Philadelphia.

### Miscellaneous.

Metallic band fastening for bales, &c., Asa O. Broad, Louisville, Ky.—Clay Pulverizers, Ira Herzey and James H. Van Riper, New-York.—Brick press, R. R. Harbour, Oskaloosa, Iowa.—Paper file, D. A. Stiles, W. Meriden, Conn.—Safety attachment for hatchways, James Bridge, Augusta, Me.—Animal trap, Henry Hackman, Jr., Pequa, Pa.—Safety Pocket, Horace Harris, Newark, N.J.—Stamp label sticker, Coleman Sellers, Philadelphia.—Smut machine, James Tompkins, Liberty, Pa.—Umbrella and Parasol, James Willis, London, Eng.—Machine for graduating linear measures, S. C. Hubbard, assignor to C. C. Hub-

bard, Middletown, Ct.—Lighting street gas, John Reede and Charles N. Tyler, Washington, D. C.—Preserving green corn, David Rowe, Baltimore.—Compound for covering Hams, Carter Van Veeck, Macomb, Ill.

# Recent Foreign Inventions.

## Puddling Pig Steel.

A Prussian correspondent of the *Mining Journal*, published in London, expresses surprise that some of the capitalists in England do not turn their attention to puddling pig steel, which in Prussia is making rapid strides. Puddling both iron and steel with gas, is very general in Prussia. In some instances the gas is obtained from the blast furnace, but in most cases it is generated to each furnace; dry wood, charcoal, lignite and turf, are employed as fuel. At one of the iron works where wood is used for gas, the charges are eight hundred weight of white mottled iron for each furnace, bringing out twenty to twenty-one tons of puddled bars per week, at a loss of only four or five per cent., and with a consumption of four cubic feet of timber per hundred weight of puddled bars. At another establishment they charge with ten hundred weight of gray pig, and bring out the charge in two and one-half hours with 8.70 cubic feet of wood per hundred weight of puddled bars. A large rolling-mill is arranged to puddle steel with gas from iron lignite, to be converted into railway wheels and tires, for which there is an increasing demand; these are forged under the hammer to nearly the required form, and then passed through a pair of rolls to finish them. A preparation of pig iron, of the following character, is found to possess some excellent qualities: A small quantity of common salt—say one and a half to two per cent.—is introduced into coke ovens, along with the small coals; the salt removes the sulphur from the coke, and hence the iron made with this coke in the blast furnace is materially improved. Bars made from this iron have broken like crown iron, and it makes capital rails. All such processes tend to bring the manufacture of this important metal to a continually higher degree of perfection.

## Manufacture of the Celebrated Russian Leather.

In the production of the well-known Russian leather, the hides to be tanned—whether wet or dry—are first laid to soak for three days and three nights in a solution of potash, to which some quicklime is added. The potash used is made of the common elm, which is said to be preferable to any other, if not essential; it is not purified, so that it is of a brown color, and of earthy appearance. About four hundred and thirty-two pounds of this and seventy-two pounds of lime, serve for one hundred skins. When the lie is weak, they let the skins lie longer in the solution. When the skins are taken out, they are carried to the river and left under water for a day and night. Next, two and a half gallons of dog's ordure is boiled in as much water as is enough to soak fifty skins; but in the winter time, when the ordure is frozen, twice that quantity is found necessary. The skins are put into this solution when it is about as hot as the hand can bear, and in this they remain one day and one night. The skins are then sewed up so as to leave no hole; in short, so as to be water-tight. About one third of what the skin will contain is then filled up with the leaves and small twigs chopped together of the plant called bearberry, which is brought from the environs of Solikamskaga, and the skin is then filled up with water. Thus filled, they are laid one on the other in a large trough, and heavy stones upon them, to press the infusion through the pores of the skin in about four hours—the filling up being repeated ten times successfully, with the same water. They are then taken to the river and washed, and are ready for the

dyeing—the whitest skins being laid aside for the red and yellow leather. The skins are softened, after dyeing, by being harrassed with a knife, the point of which curves upwards.

## Discovery in Veneering.

A process of veneering by transfer is mentioned with approval in the French journals. The sheet of veneer or inlaying to be copied is to be exposed for a few minutes to the vapor of hydrochloric acid. The sheet of veneer is then laid upon one of calico or paper, and an impression struck off by means of a common printing-press; this impression remains invisible until, as with many of the sympathetic inks, it is exposed to the action of heat, which is to be applied immediately after the sheet is printed off, when a perfect impression of all the marks, figures, and convoluted lines of the veneer is instantaneously produced. This may be repeated for an almost indefinite number of times, wetting the veneer occasionally with the dilute acid, without the impression growing fainter. The designs thus produced all exhibit a general woodlike tint, most natural when oak, walnut, maple, and the light colored woods have been employed.

## Fire-Place Shutters.

In many of the first class houses recently erected in England, fire-place shutters are provided, which, when partly drawn down, act as powerful blowers, and when wholly drawn down, so as to touch the hearthstone, entirely close up the fire-place, and instantly extinguish the combustion of the fuel in the grate, or that of the soot in the chimney, should it accidentally take fire.

Improvements in Reducing the Friction of Axles and Axletrees of Carriages on Railways. Leon Joseph Pomme de Mirionde, Paris.

This invention consists in mounting saddlewise, in axle-boxes, two friction rollers, which are shaped to correspond with the journal of the axle; and in a method of lubricating the axes of the rollers and the journal itself. Bearings are provided in the axle-boxes for the axes of the two saddle friction rollers, which rollers take the bearing of the journal of the axle.

To each side of the journal is affixed a ring, to which is connected a band or covering of some suitable flexible material: this material dips in an oil reservoir in the bottom of the axle-box, and being carried round with the axle, keeps up a continuous lubrication to the axes of the friction rollers, and to the journal of the axle.

Improvements in Apparatus to Facilitate the Printing of Yarns or Threads. Richard Whytock, Edinburgh.

According to the method usually practiced for producing figural fabrics by the use of printed yarns, hanks are formed on cylinders, and remain on the same till printed. Now there are certain difficulties in this process which it is desirable to remove. The first is, that the length of pattern is limited by the size of the cylinder: thus, a cylinder six yards round only extends figures in velvet pile to forty inches. Hence, recourse has been had to cylinders nine yards and eleven yards in circumference; but this is still not enough, although beyond this they are scarcely manageable. Attempts have been made to get over this by using two cylinders, placed at a distance asunder; but no practical means have been devised for covering them with yarns.

Now, this invention consists in employing two cylinders, or, in preference, two open reels, and placing them opposite each other: these are held together by connecting bars of wood or other suitable material, so that they can be lifted about from place to place. These reels are covered with a continuous coating of yarn or threads, laid in as regular order as the threads or yarns on a cylinder

are; and this is effected by the following process :---The reels or cylinders are each placed between two wheels of rather larger diameter than the reels. Endless bands connect those wheels, that is, one fore-wheel and one hind-wheel; so that the two endless bands run parallel to each other. Upon those parallel bands a light carriage is fixed, which conveys the bobbins containing the threads or yarns with which the reels or cylinders are to be covered. The bobbins are passed over the reels or cylinders, and then under the reels or cylinders, until so many coils or threads are placed in regular order, embracing both reels. It is a motion directly the reverse of that used in covering the cylinders; for while the cylinder revolves on its center, the hank with the bobbins is stationary. Here the reels remain passive, and the hank with the bobbins revolves round them. The change in the distance of the reels or cylinders from each other regulates the size or length of the coil. These coils may be removed from the reels, and printed on tables or under cylinders—for such patterns as are termed turn-over patterns; but it is proposed to print the coils before removal of the yarn by means of a printing machine, with traversing-pulleys, (formerly patented by the present patentee,) so that all kinds of patterns can be produced as by the cylinders, and with greater advantage.

Improvements in the Manufacture of Iron. Joseph Gilbert Martien, of Newark, N. J., U. S. A.

This invention consists in applying to and disseminating through and amongst fluid iron, or fluid metal possessing the characteristics of iron, of any kind, form, or description whatsoever, as it flows from or whilst in a transition state from a melting or re-melting furnace, cupola, fire, vessel or place of any kind or form whatsoever from which fluid iron may or can flow, (except from a smelting furnace,) atmospheric air, oxygen gas, chlorine gas, hydrogen gas, carburetted hydrogen gas, or any desirable vapor, gas, or gases, separately or combined, and in a natural state, or in a more or less heated state, as may be required, for the purpose of heating, oxidizing, deoxidizing, carbonizing, decarbonizing, purifying, strengthening, changing the nature of the metal, more or less, whatever the form, character, nature, or name the metal may have or be known by, in consequence wholly or in part of such treatment.

This invention also consists in applying to and disseminating through and amongst fluid iron of any kind, form or description, as it flows from or whilst in a transition state from a melting or re-melting furnace, cupola, fire, vessel or place of any kind or form whatever from which fluid iron may or can flow, (except from a smelting furnace,) nickel, or matter containing nickel, zinc in the form of an oxide or otherwise; manganese in the form of an oxide, carbonate, carburet, or otherwise; carbonaceous matter of any kind, or compound containing carbon; kaolin, or any matter containing kaolin, chloride of sodium, chlorates, carbonates, nitrates, or any saline, alkaline, vegetable, earthy, mineral, or metallic matter, or matters, separately or combined, and in any form, state, or condition that may be desirable for the purpose of oxidizing, deoxidizing, carbonizing, decarbonizing, purifying, alloying with the iron, or any matter contained in the iron, strengthening, changing the nature of the metal more or less, whatever the form, character, nature, or name the metal may take wholly or in part in consequence of such treatment.

An Improved Mode of Adjusting Circular Saws. Henry Laxton, of Arundel street, Strand.

This invention consists in securing a circular saw to its spindle in an oblique direction, so as to enable the saw to cut grooves and rebates of any required widths. This is effected in the following manner :—Between the saw and a collar on the spindle are two bevilled washers, each capable of being turned independently of the other; and on the opposite side, is a plain washer, having a concave recess for receiving a convex nut, which screws on to the end of the spindle and secures the saw firmly thereto. The whole is so arranged, that by changing the relative positions of the two bevilled washers, a surface more or less oblique with the axis of the spindle is presented for the saw to be secured

against. Thus the obliquity of the saw with the axis of the spindle may be varied at pleasure; and grooves of various widths may be cut into the wood submitted to its action.

AN IMPROVEMENT IN THE MANUFACTURE OF BAND-SAWS, AND OTHER ENDLESS BANDS OR HOOPS OF METAL. ROBERT THOMAS EADON, Sheffield.

This invention consists in binding a bar or rod of cast steel, or other metal suitable for the purpose required, into a circular form, and welding the ends thereof in order to insure a perfect joint; then in reducing the bar to the thickness required between rolls, whereby an endless band, whether for band-saws, casks, hoops, or for other use, is produced, of uniform strength.

The exact manner of carrying out the invention is as follows:—A bar of welding cast-steel having been prepared, of length, width, and strength suitable to the size of the saw, band, or hoop required, and of sufficient strength and weight to enable a smith to obtain a perfect weld, the same is welded into a hoop. This hoop is put into such a furnace as is ordinarily used in the saw trade, and, when heated red hot, it is placed between a pair of open-end rolls. The pressure exerted upon the rolls is regulated by a screw made to act upon the top roll: the alternate heating and rolling are continued until the hoop or band is reduced to the extent required. If intended for a band-saw, it is toothed with a bed and punch with the common press or fly. The teeth and back of the saw are afterwards filed.

The saw-band or hoop is now folded up into several coils and put into a saw hardening furnace: it is heated red hot and precipitated into a cistern containing fish oil; when removed therefrom, the oil is partially wiped off, and the coil again placed in the furnace until the requisite temper is obtained. The saw-band or hoop is afterwards smithed, planished, or hammered, until it is free from twist and bends, and straightened on both edges. The saw-band is then ground and glazed in the ordinary manner, except that in turning over from one side to the other, the saw-hoop or band is turned inside out, so that both sides may be ground and glazed. Any irregularities or bends that have been caused by grinding are afterwards straightened on a wood block of lignum-vitæ or other hard wood, by a smooth-faced hammer, so as not to cut or mark the body. The band is afterwards tempered by "blueing" in an ordinary blueing stove, in sand; any elasticity that hammering, grinding, etc., may have deprived it of being thereby restored. When the teeth have been shaped in the ordinary manner followed in the trade, the saw is ready for use.

DESCRIPTION OF IMPROVED CORN-MILL MACHINERY. MR. ALEXANDER WRIGHT, of Patrick.

In the ordinary mode of grinding wheat, the grain, after being properly cleaned, is placed in a hopper above the millstones, and is thence fed in a regular manner into the eye or central aperture of the running or top stone, and by the centrifugal effect of the stone's rotation is carried round in a spiral direction between the two stones, until it gradually reaches the circumference of the stones, whence it issues in a ground state and passes down a spout into a bin below. In this system, which has been in use for centuries, there is, the writer thinks, ample room for improvement, involving both an increase in the speed of production, and superior quality of the flour.

An injurious effect is exercised upon the grain by its coming in contact with the central portion of the stones, as at that part it is tortured over and over on a sharp flinty surface of nearly five feet area, and with a motion which, being insufficient to grind it, tears the husk and kernel, to the detriment of the flour; this action taking place before the grain reaches that portion of the stones where there is motion at once sufficient to grind it and to discharge the ground particles from between the stones.

In the improved arrangement of corn-mill machinery, forming the subject of the present paper, the area at the center of the stones is altogether removed, the stones being cut away at that part; whilst in the opening there is inserted a large distributing disc, which is driven at a high speed, for the purpose of de-

livering the prepared grain between the stones, and also causing a current of air as afterwards described.

The grain is supplied from a hopper along a spout to a small crushing apparatus, (placed above the stones,) consisting of a pair of rollers driven from the damsel spindle, by means of bevil wheels. The grain passing between the rollers on its way to the grinding surfaces, is bruised or crushed, which greatly facilitates the grinding process, and improves the quality of the flour. The crushed grain from the rollers falls upon the distributing disc, the surface of which is corrugated or notched radially, to aid the distribution of the grain : the distributor is recessed half way into the face of each stone, and revolves clear of the lower stationary stone, and also of the running stone.

The distributor is constructed so as to serve the double purpose of delivering the grain between the stones, and also of supplying a current of cool air along with the grain. The distribution disc, on which the crushed grain falls, forms the upper side of a horizontal fan, which discharges a current of cool air along with the grain between the stones. The air is drawn up through the enlarged eye of the bed stone, which is left open, like the eye of the running stone, to allow of the free introduction of cool air, to act upon the grain where the grinding action comes into most effective play. The fan of the distributor is made with a number of curved arms, the spaces between which form horizontal curved passages for the air; the outer ends of the air passages terminate at the circumference of the distributor, and the inner ends open into the central chamber of the fan, which communicates at the under side with trumpet-mouthed air tubes which pass through the eye of the lower stone and are thus capable of taking in cool air from below.

The action of the fan is such that, as the upper stone revolves, a current of cool air is drawn up through the trumpet-mouthed tubes, and discharged in a powerful stream upon the grain. By these means the grinding is accomplished very rapidly and well, and the grain and flour are kept quite cool and in good order. If the simple rate of the stones does not produce a sufficient current of air by means of the fan, as may be the case with stones of large diameter, the fan is driven at a greater velocity than that of the stones, by means of gearing, and is arranged to revolve freely about the mill spindle.

A further improvement is effected in the discharge of the flour from the millstones. Instead of allowing the flour to be carried round the inside of the casing, so as to be delivered down a spout placed at one side, the casing is formed with openings almost all round it, through which the flour falls in a thin film into the conical or funnel-shaped casing below. In passing down this casing the flour is exposed to the beneficial action of the upward current of cool air, which is ascending to supply the fan—the heated air passing off by the ordinary opening in the case over the top of the running stone. When the floor leaves the casing, by a spout at the bottom, it is in a perfectly cool state, and may be immediately bolted and put up into sacks for the baker.

The present improvements may be applied to a certain extent to old stones; but in erecting new mills or machinery, the stones should be made considerably larger than hitherto; that is to say, they should be at least six feet in diameter, instead of only four feet or four feet six inches. These large stones should be composed of a ring of burr blocks one foot broad, built up and nicely joined round a center ring, composed either of a single piece of free-stone, or of cast-iron.

Stones fitted up with the various improvements above described have, in practice, been found to do double, and in some cases more than double, the work done by ordinary stones, whilst the flour produced has been of greatly superior quality; and where the larger size of stones can be got, still better results will be obtained, whilst the motion will be easier, and there will be less of the tremor and vibration which, with ordinary arrangements, frequently annoys and frustrates the expectations of the most careful miller.

## Trial of Reapers and Mowers.

*Commencing July 14th, 1857, at Syracuse, N. Y., under the direction of the United States Agricultural Society. Hon. Marshall P. Wilder, President, Major Benjamin Perley Poore, Secretary.*

Previously to Tuesday, the day appointed for the opening exercises, H. S. Olcott, Secretary of the Implement Committee, had received notifications of entries for 38 mowers, 28 reapers, 22 combined machines for both mowing and reaping, 2 reapers with automaton rakes, and sundry other machines for various farm purposes. Only a small part of these implements, however, appear to have been actually entered. Most of those entered were either on the ground the week before, or were brought forward on Monday morning. Monday was altogether a quiet, pleasant day, and the arrangements afforded to inventors and manufacturers the best opportunity of the whole week for exhibiting their machines at rest. The pleasant, shady grounds of the Onondaga County Agricultural Society, were used for the purpose. This Society's great tent was spread for the occasion. A tent for the President and officers of the United States Agricultural Society, a large tent for refreshments, and several others for various purposes, adorned the grounds, and added much to the comfort of exhibitors and others.

On Tuesday morning, after the large procession had reached the grounds, at about eleven o'clock, Gov. King, accompanied by Gov. Morehead, of Kentucky, and Ex-Gov. Clark, of New-York, arrived on the ground under the escort of the marshals, and the Syracuse Dragoons and Washington artillery, a squad of the latter firing a salute as they entered the ground, and the band playing "Hail Columbia."

The machines then formed, and marched in procession around the track, preceded by the marshals and Sutherland's brass band. When in front of the President's stand, the procession halted, and the President of the Society, the Hon. Marshall P. Wilder, then delivered an address, characterized by his usual earnestness and devotion to the cause of agriculture.

In addressing the board of judges, Mr. Wilder said, I shall not attempt to instruct you minutely in reference to your duties. There are a few points, however, to which I deem it important that your special attention should be directed.

1. Cost of machine. 2. Simplicity of construction. 3. Durability. 4. Effective power,—or power required for a given amount of work, including the necessary attendance. 5. The rate of motion, or what a machine will accomplish under an ordinary rate of speed for daily work. 6. Quality of work, or the manner of leaving the grass and grain. 7. Facility of management. 8. Any machine posssessing special points of excellence, although as a whole it may be inferior, such special advantages should be noted, and a diploma awarded therefor.

At the conclusion of Mr. Wilder's address, which abounded in practical good sense, and was listened to with great apparent interest, loud calls were made for Governor King, who came forward and addressed the crowd in some very appropriate remarks, in which he paid a handsome compliment to the President of the United States Agricultural Society, Mr. Wilder.

Governor Morehead, of Kentucky, being vociferously called for, next came forward amid hearty cheers, and made a most interesting and patriotic speech, in which he represented his State as ever true to the Union; and as standing with one arm around the agitators of the North and the other around the disorganizers of the South, hugging each to her bosom, and trying to make them love each other, but destined to be the bloody ground of fraternal strife, if she could not succeed. He ex-

presses a wish that the extremists of North and South might oftener come together as on this occasion, and look each other in the face. He thought that neither might look so ugly to the other as both seem to think, while keeping apart.

These ceremonies concluded, next followed a brilliant collation, in the President's tent, of which the President, the invited guests, the marshals and gentlemen connected with the press partook. When "the love of eating ceased," and good things could no longer tempt the appetite, the line of march was taken up for a large, and unfortunately a rough and tangled clover field, one mile distant. Reapers, mowers, six pounders, and other signs of peace and of war alternated along the line. The cannon we suppose were well enough, though we could not exactly see why the smell of powder should mingle with the fragrance of newly cut clover. It was about two o'clock when the procession reached the field.

The machines entered the field in the manner in which they had drawn, as follows:

1. D. M. Osborne, Buffalo, mower. 2. Seymour & Morgan, Brockport, N. Y., combined machine. 3. Miller, Wright & Co., Louisville, Ky., combined machine. 4. Warder, Brokaw & Co., Springfield, Ohio, combined mower. 5. Ball, Aultman & Co., Canton, Ohio, mower. 6. T. R. Hussey, Auburn, N. Y., combined machine. 7. M. Hollenbeck, Albany, mower. 8. Howland Sanford, Poughkeepsie, N. Y., combined machine. 9. W. A. Wood, Hoosick Falls, N. Y., mower. 10. W. F. Ketchum, Buffalo, mower. 11. T. P. Burrall, Geneva, N. Y., combined machine. 12. Pells Manny, Freeport, Ill., mower. 13. Ball, Aultman & Co., mower. 14. W. A. Wood, Hoosick Falls, N. Y., combined machine. 15. A. H. Caryle, Boston, Mass., mower. 16. W. H. Hovey, Springfield, Mass., mower. 17. Rufus Dutton, Dayton, Ohio, combined machine. 18. R. L. Allen, New-York, mower. 19. Pruyn & Lansing, Albany, N. Y., mower.

An acre of ground was staked out for each machine. The unevenness of the surface and the lodged condition of the clover were calculated to put the machines to a hard trial. If they could stand the test, it was thought they could stand anything. The teams were started at three o'clock, and at four nearly the whole field was cut over.

Ketchum's improved harvester, manufactured by Messrs. Howard & Co., of Buffalo, made wholly of iron, and certainly a beautiful piece of work, did its acre expeditiously and well.

J. Manny's Patent Adjustible Self-Raking Reaper, manufactured by Manny & Co., Freeport, Ill., also did its work rapidly and in good style, and apparently without violent effort on the part of the horses. This is a recent Pells Manny, father to J. H. Manny, and we heard it said, that the machine here used was the first and the only one yet manufactured. The son, we apprehend was not easy to be beat; but if the father should beat him, we should not be sorry.

Of Allen's Mowing Machine, we heard it said by many that it worked admirably. We saw little of its work, as it was impossible among so many machines, far apart from each other, to make accurate observations on each. But having seen Allen's mower in operation a few days before in Farmington, Conn., where it worked well under exceedingly unfavorable circumstances, we were prepared to think well of it.

We are prepared to think well also of J. H. Manny's patents, both of combined reaper and mower and the single mower, as also of Kirby's improved reaping and mowing machine, and of Burrell's mower and reeper, the frame of which is wholly of iron, its draft appearing to be easy, and its work well done.

It will be understood that there were other machines than those we have named on the ground. We were under necessity of leaving at an early stage of the trial.

Our remarks relate to only a few which attracted our particular attention. The investigation of the Committee, we hope will be thorough, persevering, impartial and as far as the nature of the case admits, reliable; though it must be admitted that their task is as difficult as it is important, and while from our knowledge of the men, we are inclined to believe that "If any right arm could save Troy, these would," yet we fear it will be utterly impossible for them either to do full and equal justice to the manufacturers of these machines, or to give the farmers more than half of the real, reliable information they want. If they can do so much, it will be something; it will be worth a good deal; and we shall thank the United States Agricultural Society, at least, for what it has attempted, and for what we trust it will have partially accomplished.

Our confident expectation is, that great improvements are yet to be made in mowing and reaping by other power than that of human muscles. None but the smallest farmers should think of mowing and reaping much longer in the old way. It was very naughty in the human race, that they did not search out better ways long ago.

In the present state of things, we see not how large farmers, who *must* have some one of these machines *now*, can do better than to use the best light they can get. For smaller farmers, would it not be wise, either to wait a little, or several of them to join in the purchase of a machine to be used in common, or perhaps to hire their grass and grain by a machine held by some one in their neighborhood for the purpose.

Certainly it would not be very comfortable for a farmer of limited means, who should have purchased a machine, with the hope of its lasting many years, to be told in a few months, that his machine was behind the times, only about as good as an old almanac.

---

### TRIAL OF MOWERS NEAR HOMER AND COURTLANDVILLE, COURTLAND CO., N. Y.

On our way home from the National trial of Mowers and Reapers, at Syracuse, we stopped a day for the purpose of being present at a less extensive, but to us hardly less interesting trial of mowers, on two adjoining farms, midway between the beautiful and flourishing villages of Homer and Courtlandville.

This trial came off on Wednesday afternoon, July 21st, under the auspices of the Courtland County Agricultural Society. The first field entered was of very heavy clover and herdsgrass, considerably lodged in spots. The borders had been previously cut and the hay removed. This gave ample room for the immense assemblage of farmers and others to witness the working of the machines without crowding upon the teams.

There were present ten mowers, nine of which were worked. An acre had been previously marked off for each. The field was cut over in about one hour, some of the teams finishing their portions in less than half that time. But we did not understand that this was a match on time, but rather a test of the quality of work done by each machine, as the teams seemed to be going and standing alternately, to suit the investigation of the committee.

The work of this field being finished, the line of march was taken for another field on an adjacent farm. Here, too, the borders had been relieved of their crop to admit the multitudes, and the field was soon set off into three quarter acre parallelograms, and a proper mowing match on time commenced. It was a brilliant scene. The grass on this field was lighter than in the other, and for the most part stood erect. Most of the lots were cut in from twelve to twenty minutes. But one machine, we believe, failed of doing its work quickly enough, and that one failed altogether owing to a break of a finger and one or more cutters.

Our readers, no doubt, are by this time complaining that we deal too much in generalities. They want we should tell them outright which was the best machine, which was the worst, and so of all the grades. But really this is a harder task than we are able to accomplish. The considerable number of the machines, all in motion at once; their distance from each other; the rapidity of the work; the falling rain, which hindered our taking notes, and the difficulty of ascertaining precisely the character of the work while yet covered with the crop, all rendered it impossible for us to feel very confident in any opinions we might form. Wishing that we could do justice to all, but conscious that we can not, and sensitively alive to the importance of doing injustice to no worthy competitor, we shall attempt little more than to name the machines, with a passing remark on some of them.

1. Hussey's patent, manufactured by T. R. Hussey, at Auburn. This looked like an "old settler;" and if we were rightly informed it was the first mowing machine introduced into this region. Many farmers said in our hearing; "It is an old friend; give us the old Hussey after all; it is the best yet," and words to that effect. Some accused other patentees of stealing Hussey's "thunder," and said that the infringement was shameful, and never ought to be sustained. Of all this we leave others to judge. But it is certain that Hussey's machine did its work well and expeditiously, and was of easy draft.

2. Ketchum's Patent, manufactured by R. L. Howard, of Buffalo, N. Y. This is wholly of iron. It appeared to be a good piece of workmanship, and it worked well.

3. J. H. Manny's Patent, with Daggert's improvement, manufactured by Daggert & Jordan. Do not know how it worked, but think well.

4. J. H. Manny's Patent, with Wood's improvement, manufactured by Walter & Wood, at Hoosick Falls, Renss county, N. Y. Remark same as of the last.

5. Hallenbeck's Patent, manufactured by Hallenbeck & Cunningham, Albany, N.Y. Our impressions of it favorable.

6. Ketchum's Patent, owned by Jedediah Barber, of Homer; another old settler, said in our hearing to have been the first sold in that village. Worked well.

7. R. L. Allen's Patent, manufactured by A. B. Allen, Brooklyn, and sold by R. L. Allen, New-York. Worked well, but not quite as well as we have seen it other wheres. Our impression is, that in heavy tangled grass, in a bottom not over smooth, it does better *relatively* than in lighter and smoother work. It is an excellent grass-cutter.

8. A mower got up by Stephen W. Card, of Homer, not yet patented, we believe, but protected by a caveat. This was the only machine of the kind yet manufactured. Promises well we should think, but can say nothing positive.

Last, but it may yet turn out not least, a new machine, on really new principles, so far as we know, manufactured by Stephen R. Hunter, of Courtlandville. We have long suspected that sooner or later, a circular motion would take the place of the vibrating motion in all these machines. Mr. Hunter's machine is an effort in that direction, and though it does not confirm our previous expectations of a revolution in the grand principle of cutting grass and grain, it strengthens them. We advise Mr. H. to persevere, nothing discouraged by the breaking of a knife or two and not finishing his lot. He had not had time to complete his machine, nor to practice with in advance of the trial. We strongly incline to the belief that he has got hold of an *idea* which will be of great utility. Let it be thoroughly tested.

The time was a pleasant one, with the exception of a little rain, and the gathering could not fail to give a favorable impression of the farmers and farming in this beautiful valley.

# THE FAMILY CIRCLE.

## Scientific.

### THE WEATHER.

APPEARANCE OF BIRDS, FLOWERS, ETC., IN NICHOLS, TIOGA CO., N. Y., IN JUNE, 1857.

By R. Howell.

*Place of Observation, 42 degrees North, on a Diluvial Formation, about 40 feet above the Susquehanna River.*

| June. | 6 A.M. | 1 P.M. | 9 P.M. | | | REMARKS. |
|---|---|---|---|---|---|---|
| 1 | 61 | 81 | 64 | South | Cloudy. | Hard shower before day; lilacs begin to bloom. |
| 2 | 56 | 82 | 55 | N. W. | " | Few dashes of rain; crane's-bill begins to blow. |
| 3 | 49 | 77 | 56 | West | " | Few dashes of rain. |
| 4 | 40 | 65 | 48 | North | " | |
| 5 | 40 | 59 | 48 | N. W. | " | Light black frost in morning. |
| 6 | 39 | 69 | 52 | West | " | Quite a frost in morning. |
| 7 | 53 | 62 | 56 | " | " | Considerable rain in N.W.; began at 5 o'clock. |
| 8 | 53 | 69 | 61 | S. W. | " | Light rain in P.M., and hard rain in evening. |
| 9 | 57 | 70 | 59 | " | " | Hard rain at sunrise; moderate rain all day. |
| 10 | 58 | 76 | 62 | " | " | Light rain in A.M.; peony begins to bloom. |
| 11 | 58 | 77 | 57 | " | " | Hard rain all A.M.; at intervals in P.M. |
| 12 | 52 | 78 | 61 | S.&N. | " | Showers in P.M. and evening. |
| 13 | 53 | 84 | 64 | S. W. | " | Sprinkle of rain. |
| 14 | 54 | 71 | 53 | North | " | |
| 15 | 49 | 80 | 57 | " | " | [April. |
| 16 | 59 | 77 | 58 | South | " | Hard rain near all day; roads as muddy as |
| 17 | 59 | 84 | 64 | " | " | Light rain near night. [in evening. |
| 18 | 63 | 72 | 62 | S.East | " | Rain in morning; aurora and sheet lightning |
| 19 | 60 | 79 | 56 | " | " | Hard rain before light; wild blackberry begins to bloom. |
| 20 | 53 | 79 | 61 | " | " | Short hard shower at dark. |
| 21 | 60 | 83 | 56 | " | " | |
| 22 | 61 | 78 | 54 | S.&N. | " | Hard rain nearly all the P.M. |
| 23 | 52 | 68 | 56 | North | " | Rain all night; a few dashes near night. |
| 24 | 46 | 78 | 62 | West | " | Button rose begins to bloom. |
| 25 | 53 | 80 | 58 | " | " | June 25th and 26th, a majority of farmers hoe corn the first time. |
| 26 | 54 | 84 | 58 | " | " | |
| 27 | 58 | 84 | 62 | North | " | [evening. |
| 28 | 63 | 90 | 72 | South | " | Sprinkle of rain before light; lightning in |
| 29 | 68 | 64 | 62 | " | " | Light rain before day and hard rain in P.M. |
| 30 | 59 | 73 | 57 | " | " | Considerable rain before and after the day. |

PROSPECT OF THE CROPS IN NICHOLS AND VICINITY, JULY 13th, 1857.

Of wheat, there was sown last fall more than usual, perhaps on the account of the crop last year being but little injured by the insect wheat-fly or midge; the wheat this summer appears finer than I have seen before in a number of years, being very large and even, but I understand the insects have appeared in some crops in great numbers. I examined but two fields, and them but lightly; they were Mediterranean species, which are not generally as much injured as other species by the insect; this insect has been here nine or ten years. The rye crop is very fine, and a large amount on the ground. Oats, with the exception of a few fields on hill, are better than before in a number of years, and most probably a number of fields will be too large. The corn is about two weeks later than usual at this time of year; a number of fields have been ploughed up and sown with buckwheat or are being

now sown. There never was a season that cut-worms and birds have done so much damage as this year. Potatoes, so far, very large, that is, the tops. Meadows newly seeded generally fine; old meadows poorer than before in a number of years, being very thin and short; the hay must be light, also the pastures do grow but little, and older fields thin in the bottom, being injured by the drouth last season and also by the winter.

---

The usual chapter on Chemistry is omitted, on account of the absence of the Senior. "The Markets" are also necessarily omitted.

---

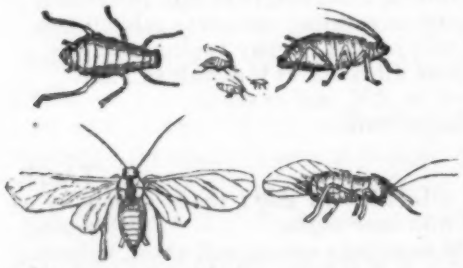
## Insects Injurious to Vegetation.

[Insects attacking the Cotton Plant, continued.]

In continuing this branch of our subject, we present our readers with the following extracts from Mr. Glover's Report, referred to in our last issue.

The Cotton-Louse.—*Aphis?*

When the cotton-plant is very young and tender, it is particularly subject to the attacks of the cotton-louse, which by means of its piercer, penetrates the outer coating, or parenchyma of the leaf or tender shoots, and sucks the sap from the wound. The under part of the leaves or young shoots are the places mostly selected, and the constant punctures and consequent drainage of sap enfeebles the plant and causes the leaf to curl up, turn yellow, and subsequently fall to the ground. The young lice are extremely minute, and of a greenish color; but when they become older, they are about a tenth of an inch in length, and often dark green; but, in some instances, they are almost black. It is conjectured that the color somewhat depends upon the health of the plant as well as that of the insect, or, perhaps, upon their food, as I have seen green and black lice promiscuously feeding upon the same plant. The female produces her young alive throughout the summer, when she may often be seen surrounded by her numerous progeny, sucking the juice from the leaves and still producing young. Some naturalists state that the females, late in the fall, produce eggs, for the generation of the next spring. If so, it is in order to preserve the species, as the insects themselves are easily killed by frost and cold; and their increase would be incalculable were it not that Nature has provided many enemies among the insect tribes to prevent their too rapid multiplication. Both males and females are said to possess wings at certain seasons; but the females and young in summer appear to be wingless. The end of the abdomen of both sexes is provided with two slender tubes, rising like horns from the back, from which often exudes the "honey-dew," or sweet gummy substance, seen sticking to the upper sides of the leaves beneath them, and which forms the favorite food of myriads of ants. Although young plants are mostly attacked, yet I have seen old "stands," in Georgia, with their young shoots, completely covered with this pest as late as November.



The principal insects that destroy the aphides are the lady-bird, the lace-fly, and the syrphus, all of which wage incessant war upon them, and devour all they can find. Another fly, the ichneumon, likewise lays an egg in the body of the louse, which, hatching into a grub, devours the inside of the still living insect until it eventually dies, clinging to the leaf even in death, and the fly makes its appearance from the old skin of the aphis.

When old cotton plants are suffering from the attacks of the louse, many planters cause their tops to be cut off and burned, and by so doing partially succeed in destroying them; yet, when we consider that, by this method, many young blossoms and "forms" must likewise be destroyed, it must be confessed that the remedy is almost as bad as the disease. In a garden or green-house, a solution of whale-oil soap, from

a syringe, showered upon the upper and under parts of the foliage, has been used with much advantage; yet, upon the extended scale of a cotton plantation, such a remedy is altogether impracticable, and, until we can collect further information upon this subject from intelligent planters, we must rest content with the instinct of our insect allies.

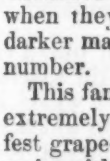
THE LEAF-HOPPER.—*Tetigonia?*

The leaves of the cotton-plant are often injured by the leaf-hopper. This small insect is found upon the plant in the larva, pupa and perfect state. In all these forms, it sucks the sap from the leaf, causing small diseased and whitish-looking spots, much disfiguring the foliage, and injuring the plant itself, when the insects are very numerous. They are also found in great numbers on grape-vines, in Florida, and injure the foliage to a considerable degree.

The perfect insects are very small, measuring only from one-tenth to three-twentieths of an inch in length. The head is somewhat crescent-shaped, of a green color, with two red spots on the upper surface. The thorax is also green, with two crescent-shaped spots of red on each side of a small red spot in the center The wing-cases are green, with two stripes or bands of red, running parallel down each wing-case, from the thorax to the upper margin, where they form an acute angle. The legs are yellowish-green, the hinder pair being much longer than the others, and furnished with bristles on the tibia. In the larva state, they are able to leap with great agility; but it is only in the perfect state that they are able to fly, the underwings being hidden by the wing-cases, and not perfectly developed in the larvæ or pupæ. There are several species of these insects found upon cotton, which it will not be necessary here to describe, as their natural history and habits are nearly the same.

In using the lantern already described, it was found that thousands of these small insects were attracted from some grape-vines in an adjoining field. The use of fires or lights may therefore be recommended to destroy them, when they become very numerous, although, as regards the cotton, they are not often found on it in numbers sufficient to do much harm.

THE RED-SPIDER.—*Acarus?*



Much injury is done to the cotton-leaf by a minute red spider, which presents very much the appearance of incipient rust, except that the leaf is of a more rusty-brown in spots, instead of the bright-yellow of the real rust. This red spider principally attacks the under side of the leaf, the spots caused by its punctures turning brown, and finally increasing until it is completely stung all over, and falls from the plant.

This insect is extremely minute, and when on the leaf, it can scarcely be discerned by the naked eye. Some of the young appear to be of a greenish cast; but when they are advanced in age, the abdomen assumes a dark crimson shade, with darker maroon spots upon its upper surface. The legs, which are hairy, are eight in number.

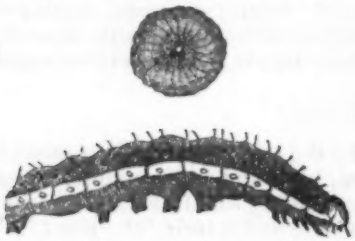
This family of the mites, (acari,) do much injury to vegetable life, as they are so extremely minute as to escape the notice of the superficial observer. When they infest grape-houses, or rose-bushes, it has been recommended to dust the leaves while moist with flour of sulphur.

THE BOLL-WORM.—*Heliothes?*

The egg of the boll-worm moth is generally deposited on the outside of the involucel, or outer calyx of the flower, and I have taken it from the outer calyx even of the young boll itself. It has been stated that the egg is laid upon the stem, which also forms the first food of the young worm; but, after a thorough and careful examination of several hundred stems, I found only one egg in this situation, and that, from its being upon its side instead of its base, had evidently been misplaced, and never hatched.

The egg of the boll-worm is laid singly upon the involucel, about twilight, and is of a somewhat oval shape, rather flattened at the top and bottom, and is formed with

ridges on the side, which meet at the top in one common center. The color is yellowish until nearly hatched, when it becomes darker, the young enclosed caterpillar showing through the translucent shell. A single boll-worm moth, dissected by Dr. John Gamble, of Tallahasse, contained at least five hundred eggs, which differed much from those of the cotton-caterpillar moth, which are round and flattened like a turnip, of a beautiful green color, and scarcely to be distinguished from the leaf on which they are deposited. The eggs of the boll-worm moth hatched in three or four days after being brought in from the field, and the young worms soon commenced feeding upon the parenchyma, or tender fleshy substance of the calyx, on the outside, near where the egg was laid. When they had gained strength, they pierced through the outer calyx, some through the petals into the enclosed flower-bud, while others penetrated the boll itself. Sometimes the pistil and stamens are found to be distorted and discolored, which is caused by the young worm when inside the bud, eating the stamens and injuring the pistil, so that it is drawn over to one side. When this is the case, the young worm bores through the bottom of the flower, into the young boll, before the old corolla, pistil, and stamens fall off, leaving the young boll, inner calyx and outer calyx, or involucel, still adhering to the foot-stalk, with the young worm safe in the growing boll.



The number of buds destroyed by this worm is very great, as they fall off when quite young, and are scarcely observed as they lie brown and withering on the ground. The instinct of the caterpillar, however, teaches it to forsake a bud or boll about to fall, and either to seek another or to fasten itself to a leaf, on which it remains until the skin is shed; it then attacks another bud or boll in a similar manner, until, at length, it acquires size and strength sufficient to enable it to bore into the nearly-matured bolls, which are entirely destroyed by its punctures; for, if the interior is not devoured, the rain penetrates the boll and the cotton soon becomes rotten and of no value.

The rotted bolls serve also for food and shelter to numerous small insects, such as those already mentioned, and which have been erroneously accused of causing the rot. Whenever a young boll or bud is seen with the involucre, or outer calyx, called by some the "ruffle," spread open, it may be safely concluded that it has been attacked by the worm, and will soon fall to the ground and perish. The older bolls, however, remain on the plant; and if many of the fallen buds or bolls be closely examined, the greater portion of them will be found to have been previously pierced by the worm, the few exceptions being caused either by the minute punctures of some of the plant-bugs, from rain, or other atmospheric influences. Those injured by the worm can be distinguished by a small hole on the outside where it entered, and which, when cut open, will generally be found partially filled with small fragments of fœces.

When very young the boll-worm is able to suspend itself by a thread, if blown or brushed from the boll or leaf on which it rested. After changing its skin several times and attaining its full size, the caterpillar descends into the ground, where it makes a silky cocoon, interwoven with particles of gravel and earth, in which it changes into a bright chestnut-brown chrysalis. The worms which entered the ground in September and October, appeared as perfect moths about the end of November.

A boll-worm, which was bred from an egg found upon the involucel, or ruffle, of the flower-bud, grew to rather more than a twentieth of an inch in length by the third day, when it shed its skin, having eaten in the meantime nothing but the parenchyma, or tender fleshy substance from the outside. On the fifth day it bored or pierced through the outer calyx, and commenced feeding upon the inner; and on the sixth day it again shed its skin, and had increased to about the tenth of an inch in length. On the tenth day it again shed its skin, ate the interior of the young flower-bud, and had grown much larger. On the fourteenth day it for the fifth time shed its skin, attacked and ate into a young boll, and had increased to thirteen-twentieths of an inch in length. From this time it ate nothing but the inside of the boll, and on the twentieth day the skin was again shed, and it had grown to the length of an inch and one-tenth, but unfortunately died before completing its final change.

These moths probably lay their eggs on some other plants when the cotton is inaccessible, as a young boll-worm was found this season in the corolla of the flower of a

squash, devouring the pistils and stamens; and as there is a striking similarity between the boll-worm and the corn-worm moth, described in the Agricultural Report for 1854, in the appearance, food and habits, alike in the caterpillar, chrysalis, and perfect state, it will perhaps prove that the boll-worm may be the young of the corn-worm moth, and that the eggs are deposited on the young boll, as the nearest substitute for green corn, and placed upon them only when the corn has become too old and hard for their food.

Colonel B. A. Sorsby, of Columbus, in Georgia, has bred both these insects, and declares them to be the same; and, moreover, when, according to his advice, the corn was carefully wormed on two or three plantations, the boll-worms did not make their appearance that season on the cotton, notwithstanding that, on neighboring plantations, they committed great ravages.

The worms, or caterpillars, have six pectoral, eight ventral, and two anal feet, and creep along with a gradual motion, quite unlike the looping gait of the true cotton-caterpillar, and vary much in color and markings, some being brown, while others are almost green. All are more or less spotted with black, and slightly covered with short hairs. These variations of color may perhaps be caused by the food of the caterpillar. Some planters assert that, in the earlier part of the season, the green worms are found in the greatest number, while the dark brown are seen later in the fall, as we know is the case with the cotton-caterpillar.

The upper wings of the moth are yellowish, in some specimens having a shade of green, but in others of red. There is an irregular dark band running across the wing, about an eighth of an inch from the margin, and a crescent-shaped dark spot near the center; several dark spots, each enclosing a white mark, are also discovered on the margin; the under wings are lighter colored, with a broad black border on the margin, and are also veined distinctly with the same color. In the black border, however, there is a brownish-yellow spot of the same color as the rest of the under wings, which is more distinct in some specimens than in others, but may always be plainly perceived. There is also, in most specimens, a black mark or line in the middle of the under-wings, on the nervure; but, in some, it is very indistinct.

These moths multiply very rapidly; for, as I have before observed, one female moth sometimes contains five hundred eggs, which, if hatched in safety, would rapidly infest a whole field, three generations being produced in the course of a year.

In an interesting communication from Colonel Benjamin F. Whitner, of Tallahassee, he states that the boll-worm was scarcely known in his neighborhood before the year 1841; and yet, in the short period of fourteen years, it had increased to such a degree as to have become one of the greatest enemies to the cotton on several plantations in that vicinity.

It has been recommended to light fires in various parts of the plantations, at the season when the first moths of this insect make their appearance, as they are attracted by light, and perish in great numbers in the flames; and, if the first brood of females be thus destroyed, their numbers must necessarily be reduced, as it is highly probable that it is the second and third generations which do the principal damage to the crops. Some successful experiments in killing these moths with molasses and vinegar were made by Captain Sorsby a year or two ago, which I here describe in his own words:

"We procured eighteen common-sized dinner-plates, into each of which we put about half a gill of vinegar and molasses, previously prepared in the proportion of four parts of the former to one of the latter. These plates were set on small stakes, or poles, driven into the ground in the cotton-fields, one to about each three acres, and reaching a little above the cotton plant, with a six-inch-square board tacked on the top to receive the plate. These arrangements were made in the evening soon after the flies had made their appearance. The next morning we found from eighteen to thirty-five moths to each plate. The experiment was continued for five or six days, distributing the plates over the entire field, each day's success decreasing until the number was reduced to two or three to each plate, when it was abandoned as being no longer worthy of the trouble. The crop that year was but very little injured by the boll-worm. The flies were caught, in their eagerness to feed upon the mixture, by alighting into it and being unable to make their escape. They were doubtless attracted by the odor of the preparation, the vinegar probably being an important agent in the matter. As flies feed only at night, the plates should be visited late every evening, the insects taken out, and the vessels replenished, as circumstances may require. I have tried the experiment with results equally satisfactory, and

shall continue it until a better one is adopted." It might be well also to try the lantern-trap before mentioned, as another means of destruction, and, likewise, the method of poisoning recommended in the general remarks on insects. As it appears from Colonel Sorsby's communication that the moth is attracted by, and feeds with avidity upon molasses and vinegar, could not some tasteless and effective poison be mixed with this liquid, so that all the early moths which might partake of it would be destroyed before laying their eggs?

THE RED-BUG, OR COTTON-STAINER.—*Lygæus?*

This destructive insect is found by millions in East Florida on the cotton plantations, where it does immense damage by staining the fibre of the cotton in the bolls, and rendering it unfit for use where pure white fabrics are required. The specimens figured were found near Jacksonville, in October, on the open bolls, under the dried calyx, and congregating together on the dead leaves under the plants, or on rotten logs or decayed wood. Several of the open bolls were actually red with these insects, exhibiting every stage of growth, from the larva to the perfect bug, all clustered together in such masses as almost to hide the white of the cotton itself. The beak, or rostrum, is four-jointed, with the end blackish, and, when not in use, is re-curved under the thorax, which is somewhat triangular in shape, with the anterior part red; a narrow, distinct band of whitish-yellow divides the thorax from the head; the posterior part is black, edged between the thorax and wing-cases with whitish-yellow; the scutellum is triangular, red, and edged with a distinct line of whitish-yellow on each side, and partly down the center of the wing-case; the elytræ, or wing-cases, are flat, brownish-black, and containing two distinct x-shaped whitish-yellow lines on them, intersecting each other near the center; the wing-cases are also edged with a distinct yellowish line, as far as the x. The body is flattened, and, in the female, projects on each side beyond the wing-cases, showing the bright red of the abdomen, and contrasting with the dark color of the wing-cases. The under wings are hidden under the upper wing cases, and are transparent, veined, and of a yellowish color, clouded with black. The thighs of the fore-legs are somewhat spiny near the tibiæ, and of a red color. The tibiæ and tarsi are black; the under part of the body is bright red, with rings of yellowish-white running around it on the edge of each segment.

The female produces about one hundred eggs; the young larva is completely red, almost scarlet, with distinct whitish-yellow bands around the body, on the edge of each segment. The thighs are red, with the tibiæ, tarsi, and antennæ blackish.

The pupa differs only in size and in having the unformed wing-cases very small and black, contrasting strongly with the vivid red of the body.

The perfect male is about three fifths an inch in length, and the female about seven tenths of an inch, from the head to the end of the abdomen. They are similar in shape and color, differing only in size. The head and eyes are red, the antennæ black, with four long joints.

The following communication on the subject of this insect was received from Mr. B. Hopkins, of Jacksonville, a practical Sea-Island planter, of nearly thirty years experience:

"The 'red bugs,' or, as they are sometimes properly denominated, the 'cotton-stainers,' generally make their appearance about August or late in July, which is near the usual season for cotton to begin to open. They can readily be distinguished from other bugs, harmless in their nature, by their being of a red color, and more sluggish in their movements. The nearer the fruit advances towards maturity, the more injury they do to the cotton. The pod, or boll, is perforated by this bug. Whether the staining matter is imparted to the fibre of the cotton during the perforation directly, or by a slow process diffusing itself with the sap abounding at that time in the pod, is not yet ascertained. I am of the latter opinion from the fact that almost the entire product of the boll is discolored when it opens, which does not seem at all to cause a premature development. As winter approaches they gradually retire and take refuge among the logs, or burrow into the soil at the root of the cotton-plant, where they hybernate. After a wet season, in winter, they may be found in hundreds on the sunny side of the stalks, enjoying the genial atmosphere until towards evening, when they again retire. They can be kept down very easily when there are not more than five acres planted to the hand.

"I have been in the habit of offering a reward every night to the negro that brings

in the greatest quantity, each of whom is furnished with a pint bottle suspended across the shoulders, into which, as they pass along picking the cotton, they deposit all they can discover. In many instances I have seen the bottle filled by one negro in a day. They may also be greatly reduced by destroying them when they come out in winter in their half-torpid state; a torch of fire in that case is best. They may be buried a foot under ground, and most of them will still escape from their inhumation. If there should be stumps or trees in the fields, they should be burned, and that will generally reduce the quantity for a year or more. In fact, when they receive timely and proper attention, they need not be dreaded.

"No process that I know of can extract the stain produced in the bolls; it is indelible, and considerably reduces the price of the cotton in the market. These insects have been much on the increase for the last ten years, which I attribute to the excess in planting, as well as the want of proper efforts for their destruction."

It has been stated by other planters that the fœces of the insect produces the reddish or greenish stain, and that the red-bugs will collect where there are splinters and fragments of sugar cane. Advantage has already been taken of this habit to collect them by means of small chips of sugar-cane, when they may be destroyed by boiling water; and as they also collect around piles of cotton-seed, they may thus be easily decoyed and then killed, either by fire or hot water, when congregated. All stumps and dead trees standing in the field should be well burnt out. The experiment to destroy them by means of the crushed sugar-cane and poison has been tried, but as no report of the experiment has been received, it remains doubtful whether it can be recommended or not.

---

FOR THE AMERICAN FARMERS' MAGAZINE.

## Origin of Plants.

"MR. NASH:—DEAR SIR:—I wish to propose a question, suggested to me by our mutual friend, whom you know to be one of the students of Nature, and an ardent inquirer into her mysterious operations—a question that I know you will elucidate and enliven, with your active mind and pen: "Do not the elementary principles of all vegetable life originate in the rocks?" Or, it might be stated thus: "Did not the elementary principles of *primal* vegetable life originate entirely from the rocks?" This question, suggests an innumerable train of curious and interesting inquiries.

It takes us back to the pre-Adamite period, when vegetable life existed in its rude and more imperfect forms. There must have been a time when the *first form* of vegetation made its appearance. Did it come from the vitalization of seeds? I believe it did. Seeds, in the first instance, must have been created by the direct power of God; but he always works by the most natural, direct, and immediate causes; and seeds probably were formed from materials at hand; *immediately at hand.* I believe there is not an element of vegetable life, on the closest analysis, that can not be found in the *atmosphere, water, soil,* and rocks; nor is there an element in the first, that can not be found in the last. Am I right? Please give us a chapter on this question, and oblige yours truly."

This was manifestly intended as a private note, but with the suppression of names we venture to publish it. It contains the germs of thought, which we should like to have the writer or any other person, who is able to do it as philosophically and as correctly, enlarge upon. For ourself, we know not why the oak springs up after the pine on old worn fields, where the acorn is not known to be imbedded in the soil; nor from what seed the blue grass comes, after the fire on our western soils; nor where the white clover, from hard pan thrown from the bottom of a well. If anybody can throw light on our correspondent's questions we will gladly give a reasonable space. There is no reason to fear that religion will suffer, nor to doubt that theology will be improved, by any candid researches into nature.

# Domestic.

## Air Poison.

People have often said that no difference can be detected in the analyzation of pure and impure air. This is one of the vulgar errors difficult to dislodge from the public brain. The fact is, that the condensed air of a crowded room gives a deposit which, if allowed to remain for a few days, forms a solid, thick, gluinous mass, having a strong odor of animal matter. If examined by the microscope, it is seen to undergo a remarkable change. First of all, it is converted into a vegetable growth, and this is followed by the production of multitudes of animalcules; a decisive proof that it must contain organic matter, otherwise it could not nourish organic beings. This was the result arrived at by Dr. Angus Smith, in his beautiful experiments on the Air and Water of towns; where he showed how the lungs and skin gave out organic matter, which is in itself a deadly poison, producing headache, sickness, disease, or epidemic, according to its strength. Why, if "a few drops of the liquid matter, obtained by the condensation of the air of a foul locality, introduced into the vein of a dog, can produce death with the usual phenomena of typhus fever," what incalculable evil must not it produce on those human beings who breathe it again and again, rendered fouler and less capable of sustaining life with every breath drawn? Such contamination of the air, and consequent hot-bed of fever and epidemic, it is easily within the power of man to remove. Ventilation and cleanliness will do all, so far as the abolition of this evil goes, and ventilation and cleanliness are not miracles to be prayed for, but certain results of common obedience to the laws of God.—*Dickens' Household Words.*

## Educate the Whole Man.

Everybody should have his head, his heart, and his hand educated; let this truth never be forgotten.

By the proper education of his head, he will be taught what is good, and what is evil—what is wise, and what is foolish—what is right, and what is wrong. By the proper education of his heart, he will be taught to love what is good, wise, and right, and to hate what is evil, foolish, and wrong; and by the proper education of his hand he will be enabled to supply his wants, to add to his comforts, and to assist those who are around him.

The highest objects of a good education are to reverence and obey God, and to love and serve mankind; everything that helps us in attaining these objects is of great value, and everything that hinders us is comparatively worthless. When wisdom reigns in the head, the hand is ever ready to do good; order and peace smile around, and sin and sorrow are almost unknown.—*Cotton Planter.*

## Statistics of English and French Agriculture.

Some interesting statistics relative to the agriculture of France and England, were given in a lecture delivered lately in Cornwall, England, by M. R. de la Trehonnais. In England, out of 50,000,000 acres cultivated, 10,000,000 are sown to wheat or other cereal crops, while in France 50,000,000 were cultivated for that purpose. The average growth of wheat per acre in England is four quarters—the quarter is eight bushels—and in France only one and three-fifth quarters; while the produce of English land is about £3 4s. per acre, and that of French £1 12s. per acre. The number of sheep grown in each country is about 35,000,000, and the wool produced about 60,000 tons; but, owing to the difference in the acreage, there is something less than one and one-half sheep per acre in England, and only about one-third of a sheep per acre in France. In France there are annually slaughtered 4,000,000 of cattle, the average weight of each being two cwt.; while in England there is not half the number slaughtered, but the average weight is five cwt.—*The Farmer.*

We can hardly believe all of the above statements. So far as true, they afford an argument in favor of large farms, which has always been the policy of England, while the reverse has prevailed in France.

## The Emigration to America.

The number of passengers arrived in the United States, during the year 1856, was 135,308 males, 89,188 females; total, 224,496—a smaller number than in any year of the last ten, except 1850, when the number was only 65,570. The largest number was in 1854, 460,474; the number in 1855 was 230,476. Of the emigrants arrived last year, there were born in Germany, 63,807; Ireland, 54,349; England, (principally Mormons,) 25,904; United States, 24,060; Great Britain and Ireland, 14,331; France, 7,246; Prussia, 7,221; British America, 9,493; China, 4,733; Wales, 3,297, etc. The number landed in New-York was, 162,108; in Boston, 19,225; New-Orleans, 18,758; Pennsylvania, 8,450; Maryland, 6,123; California, 5,668; and Texas, 1,576.

There are said to be 100,000 German inhabitants in the city of New-York. They have upwards of twenty places of public worship, upwards of fifty schools, ten book stores, and five printing establishments; and a German theatre.

## Simple Cure for Dysentery.

An old friend handed us the following simple recipe for publication. It has been practiced in his family for many years, with uniform success, even in the most alarming stages of the complaint: Take Indian corn, roasted and ground in the manner of coffee, (or coarse meal browned,) and boiled in sufficient quantity of water to produce a strong liquid like coffee, and drink a tea cup full, warm, two or three times a day. One day's practice, it is said, will ordinarily effect a cure.—*Middleton Republican.*

Not a bad medicine to take. Safer, in a bad case, to call a physician.—Ed.

## Some Truth.

In the museum, at Hifalutin, is a flea skin containing seven misers' souls, seven rich men's consciences, the "principles" of seven leading politicians, seventeen old bachelors' hearts, and the remaining sweetness of seventy old maids.

All right but the last. A woman's not being married is not always evidence of the want of a large soul. The patient toil, the self-sacrificing spirit, the modest worth of many an old maid, are among the brightest things of earth. Many a man has been great and good, a blessing and an honor to his race, who would have been a loss, or a curse to the world, but for the self-sacrificing affection of a maiden sister, or a maiden aunt. Leave off this indiscriminate laughing at old maids. It's a shame.—Ed.

## Agricultural College.

The State of Michigan has established a College of Agriculture, on a farm of seven hundred fertile acres, near the city of Lansing, where the state capital is located, Joseph R. Williams, late editor of the *Toledo Blade*, is President. It has now an endowment of fifty-six thousand dollars, the proceeds of the Salt Spring given to Michigan Territory by the federal government. The legislature has appropriated twenty thousand dollars per annum for two years to the support of the College. There are already accommodations for eighty students. No charge is now made for tuition, but each student is required to work three hours per day, for which he is paid.

## Costly Bridges.

The suspension bridge about to be erected over the Mississippi, at St. Louis, will, it is said, cost about two millions of dollars; it will be about eighty feet above high water, and over a mile in length, and the bottom of the towers will be sixty feet below water. It has been stated that this structure will be the most costly of any of its kind in the world. There are, however, many bridges in the world which have cost more money than will that of St. Louis. Three of those crossing the Thames at London, cost—the London bridge, ten millions of dollars; the Southwark, eight millions; and the Waterloo, five millions. The celebrated tunnel under the Thames, at London, cost over three millions of dollars.

Infidels often grumble about the cost of preachers, who, by the by, are the poorest paid set of men in the United States, as a whole, with here and there an exception; and who, in order to live, must have donation parties, as though they were paupers, because they were preachers of eternal realities. The cost of all the clergy in the United States is but $12,000,000 annually, while the criminals cost $40,000,000, the lawyers $76,000,000, and intoxicating liquors $200,000,000.

---

If the talent of ridicule were employed to laugh men out of vice and folly, it might be of some use to this world; but instead of this we find that it is generally made use of to laugh men out of virtue and good sense, by attacking everything that is solemn and serious, decent and praiseworthy, in human life.

---

## Protection to Game.

The Legislature of Ohio has passed a law for the protection of the birds, &c., which makes it a fineable offence to any one to kill a rabbit, deer, or any of the feathered tribe mentioned, between the 1st of February and the 15th of September, or to kill a blue-bird, mocking bird, red-bird, or any other singers at *any time.*

Children (especially grown up children) should seek pleasure in almost anything rather than in destroying birds. Birds are of enormous value to a country by destroying insects hurtful to fruits and other crops. There is little danger of having too many birds; and it is a great pity that one should be destroyed wantonly.—Ed.

---

## The Future.

The fate of this country depends on nothing so much as on the growth or decline of the great idea what lies at the foundation of all our institutions—the idea of the sacredness of every man's right, the respect due to every human being. This exists among us. It is now to stamp itself on manners and common life—a far harder work. It will then create a society such as men have not anticipated, but which is not to be despaired of, if Christianity be divine, or if the highest aspirations of the soul be true.—*Channing.*

---

## A Sensible Doctor.

A handsome widow applied to a physician to relieve her of three distressing complaints, with which she was afflicted.

"In the first place," said she, "I have little or no appetite. What would be best for that?"

"For that, madam, you should take air and exercise."

"And, doctor, I am quite fidgety at night and am afraid to sleep alone. What shall I do for that?"

"For that madam, I can only recommend that you take—a—husband!"

"Fie! doctor. But I have the blues terribly. What shall I do for that?"

"For that, madam, you should, besides taking air, exercise, and a husband, take a newspaper."

Sensible Doctor, that.

---

## A Hint for the Season.

The simplest and best way of preserving woolens through the summer from the destruction of the moths is to wrap them well up, after brushing and beating them, in cotton or linen cloths. The moths can pass neither. Two covers well wrapped around, and secured from the air will be effectual. An old sheet will answer and save all expense of camphor, etc.

---

## Fanning Mills.

In calling attention to the advertisement of R. M. Welles, of Athens, Bedford Co., Pa., we will only say, that we have recently visited his establishment, and we judge from the general good order prevailing, from the intelligence of the men employed, and from the appearance of the work, that the public may rely upon Mr. Welles for a good article in his line.

# Children's Page.

## Sowing and Reaping, or Work for all Seasons.

Never stand still, brave youth or fair maiden, with hands folded and eyes half shut, upon the supposition that you have nothing to do in making the world's machinery go with less creaking and jarring. Neither adopt the other extreme, and because you are of somewhat an ambitious and active temperament, fancy you can manage the whole affair yourself, and like Atlas carry the globe on your shoulders.

We have each and all of us something to do, but it can be done without much noise or trouble, if we only think so. Our words, actions, our every look, tone, smile, or frown, are exerting an influence upon those around us, and the sum of happiness they enjoy increased or diminished by us. Smiles which cost us nothing, but which, rightly bestowed, may enliven a whole day, we must not grudge, and kind words and gentle tones we can surely afford to the friend at our fireside or the beggar at our gate.

There is no neutral stand for us to take. We are positively good or bad. While we profess to love our fellow-creatures, we are acting the part of a hypocrite if we do not manifest that love by sympathy in their troubles and joy in their prosperity.

There are persons whose presence in a room is like "the sunbeam in a wintry day," making all hearts feel better and happier; "in the clear heaven of whose unclouded eyes an angel-guard of loves and graces lie."

"They are sowing the seed of word and deed,
Which the cold know not, nor the careless heed,
Of the gentle word and the kindly deed,
Which have blessed the heart in its sorest need,
Sweet shall the harvest be."

There are others whose repelling, forbidding faces are like the door of a tomb on which is written, "Wit, and grace, and all that is lovely, lie buried here." Their hollow, grating voices give one a feeling of chilliness and gloom, and every narrow expression of their dwarfed and barren minds causes us to shrink from contact with such poor, suspicious, perverted natures. Sowing in young minds seeds of discord and misery, of wrath and bitterness—holding the wine cup to the lips of the inexperienced and careless—tempting with gold the poor and needy—enticing them to the haunts of the gambler—instructing them in villainy—luring with honeyed words the young and innocent to the very lowest depths of moral, mental, and physical pollution—these agents of the powers of darkness are ever busily at work.

"Daily sowing the seed of pain,
Of late remorse and a maddened brain;
And the stars shall fail, and the sun shall wane
Ere they root the weeds from the soil again;
Dark will the harvest be."

Dwellers in peaceful happy homes, young men and maidens, the pride of your parents and the future hope of your country, there is work enough for you all. Without any clamoring or struggling for official stations on the one side, or stepping aside from the sacred ministries of home in a contest for "woman's rights" on the other, you can help to accomplish what legislation never yet effected—the moral regeneration and redemption of fallen humanity.—*Annie Lee in Life Illust.*

---

"Mr. Green, when you said there was too much American eagle in the speaker's discourse, did you mean that it was a talon-ted production; and to what claws of the speech did you especially refer?"

---

What a world of gossip would be prevented if it was only remembered that a person who tells you of the faults of others, intends to tell others of your faults.

---

The "eye of the law" has become so weak from the want of proper practice in the different courts, that it is going to advertise for a pupil

# Book Notices, etc.

THE CONGREGATIONAL HYMN BOOK, for the Service of the Sanctuary. Boston; John P. Jewett & Co. 1857. 752 pages.

This manual is executed on beautiful paper, and the hymns, 1081 in number, printed in a new and elegant type, are choice, evangelical, and admirably arranged by topics. The work does honor to editor and publishers.

THE COTTON PLANTER; Montgomery, Ala. N. B. CLOUD, M.D. Agricultural Ed.; CHAS. A. PEABODY, Horticultural Ed.

This monthly reaches us in a style and dress which clearly indicates either that the publishers are "casting bread upon the water" with the belief that it will sooner or later come back to them, or that the farmers of those regions are already giving it a generous support. The latter we hope. The July No. is peculiarly rich; and is faultless in its style of execution.

SOUTHERN PLANTER; F. G. RUFFIN, Ed. Ruffin & August, Proprietors.

The July No. of this monthly comes to us replete with matters of the highest interest to the cultivators of the soil. If Virginia farmers comprehend their true interests, they will give it a liberal support.

THE NORWICH AND WORCESTER route to Boston has many attractions. It has fine boats, well officered, and its train of cars from Norwich, arrive in Boston in the morning in season for trains going East.

## United States and State Fairs for 1857.

FAIR of the United States Agricultural Society, Hon. Marshall P. Wilder, President, will be held at Louisville, Ky., September 1—4.

Annual Exhibition of the American Institute, in the Crystal Palace, New-York, opens September 15. (Goods received now.)

| | | |
|---|---|---|
| Ohio | Cincinnati | September 14—18. |
| Canada East | Montreal | September 16—18. |
| Illinois | Peoria | September 21—26. |
| Pennsylvania | | Sep. 29, to Oct. 2. |
| Vermont | Montpelier | Sep. 30, to Oct. 2. |
| Wisconsin | Janesville | Sep. 29, to Oct. 2. |
| Michigan | Detroit | Sep. 29, to Oct. 2. |
| New-Jersey | New-Brunswick | Sep. 29, to Oct. 2. |
| Maine | Bangor | Sep. 29, to Oct. 1. |
| California | Stockton | Sep. 29, to Oct. 2. |
| Canada West | Brantford | Sep. 29. to Oct, 2. |
| United States | Louisville, Ky. | October 1—6. |
| Indiana | Indianapolis | October 4—10. |
| New-York | Buffalo | October 6—9. |
| Iowa | Muscatine | October 6—9. |
| New-Hampshire | Concord | October 7—9. |
| Kentucky | Henderson | October 13—16. |
| Connecticut | Bridgeport | October 13—16. |
| East Tennessee | Knoxville | October 20—23. |
| Massachusetts | Boston | October 21—24. |
| Maryland | Baltimore | October 21—25. |
| West Tennessee | Jackson | October 27—30. |
| Virginia | | October 28—31. |
| Tennesse | Nashville | October 12—17. |
| Alabama | Montgomery | October 27—30. |

# SUPER PHOSPHATE OF LIME MANURE.

## C. B. DE BURG

Has the pleasure of announcing to his former patrons and other farmers who may wish to improve their Soils, that he has during the past year succeeded in manufacturing from the Gas Works around the city, a superior quality of Sulphate of "Ammonia," in large quantities, and he is now prepared to furnish

### C. B. De Burg's Super Phosphate of Lime,

highly charged with "Ammonia," which, from experiments made by scrupulous experimentors, is now acknowledged to be the most valuable element in all kinds of Organic and Artificial Fertilizers. Public State Agricultural Societies, and distinguished Farmers tried many experiments the past season with his preparation side by side of Peruvian Guano and other concentrated Manures, with universal success—detailed accounts of these will shortly be placed before the public for examination. The proprietor is working for future and lasting reputation, and begs to assure his friends that *he* will spare no pains or efforts to make every package of "Super Phosphate" bearing his name, just what it purports to be.

To avoid imposition or deception being practised, henceforth all packages will be distinctly marked, "C. B. De Burg's No. 1, Super Phosphate of Lime."

Pamphlets, with instructions for use, etc., will be forwarded on application to

C. B. De Burg, Sole Proprietor,

tf. WILLIAMSBURGH, LONG ISLAND, NEW-YORK.

---

# SALAMANDER SAFE.

## TILTON & McFARLAND,

## 26 CEDAR STREET, NEW-YORK,

OFFER THEIR

# FIRE AND BURGLAR PROOF SAFES

To the public, as superior to any manufactured in the world, either for FIRE OR BURGLAR PROOF qualities; and are warranted entirely FREE FROM DAMPNESS, which is not the case with many others manufactured here. Of the thousands sold by us, in not one of the many that have been tested in actual fires of the most intense heat, have the

**BOOKS OR PAPERS SUFFERED THE LEAST!**

Nor have Burglars, after repeated attempts, ever been able to pick our POWER AND BURGLAR PROOF LOCKS. These Safes have the precedence in the Government Offices at Washington, and are introduced in preference to others in the Patent Office, for the safe deposit of Government Jewels.

☞ Purchasers are invited to call, examine, and compare prices and qualities with other manufacturers'.

**26 CEDAR STREET, New-York.**
**14 HOWARD ST., Boston, Mass.**
**18 EXCHANGE ST., Portland, Me.**
**145 PLATT ST., Baltimore, Md.**
**69 MARKET ST., Nashville, Tenn.**
**90 BATTERY ST., San Francisco. Cal.**

---

# LYON'S KATHAIRON

Has now become the standard preparation for the HAIR. Its immense sale, nearly ONE MILLION BOTTLES per year, attests its excellence and great superiority over all other articles of the kind. The ladies universally pronounce the Kathairon to be, by far, the finest and most agreeable article they ever used. It RESTORES the Hair after it has fallen out; INVIGORATES and BEAUTIFIES it, giving to it a rich, glossy appearance, and imparts a *delightful perfume.* Sold by all dealers throughout the United States, Canada, Mexico, Cuba, and South America, at 25 Cents per bottle.

HEATH, WYNKOOP & Co., Proprietors,

63 *Liberty Street, New-York.*

**Manufacturers, also, of Perfumery of all kinds, and in great variety**

# Doctor Hoofland's Celebrated German Bitters,

**PREPARED BY Dr. C. M. JACKSON, PHILADELPHIA, Pa.,**

*Will effectually cure Liver Complaint, Dyspepsia, Jaundice, Chronic or Nervous Debility, Diseases of the Kidneys, and all Diseases arising from a disordered Liver or Stomach—such as*

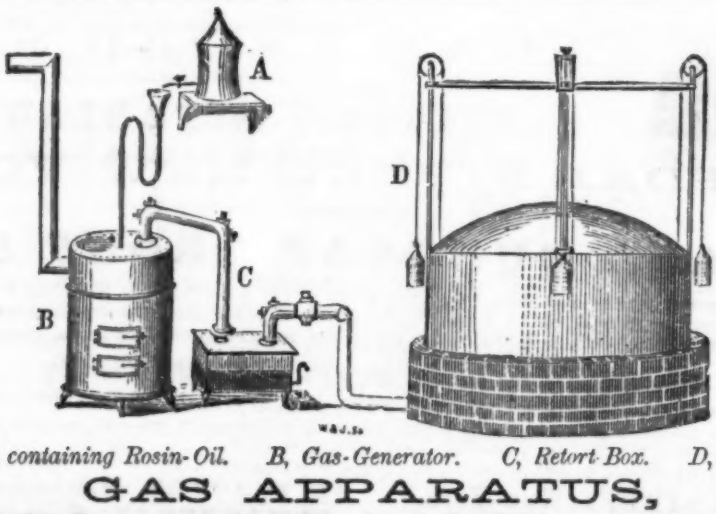
**Constipation, Inward Piles, Fullness or Blood to the Head, Acidity of the Stomach, Nausea, Heartburn, Disgust for Food, Fullness or Weight in the Stomach, Sour Eructations, Sinking or Fluttering at the Pit of the Stomach, Swimming of the Head, Hurried and Difficult Breathing, Fluttering at the Heart, Choking or Suffocating Sensations when in a Lying Posture, Dimness of Vision, Dots of Webs before the Sight, Fever and Dull Pain in the Head, Deficiency of Perspiration, Yellowness of the Skin and Eyes, Pain in the Side, Back, Chest, Limbs, &c., Sudden Flushes of Heat, Burning in the Flesh, Constant Imaginings of Evil, and great Depression of Spirits.**

The proprietor, in calling the attention of the public to this preparation, does so with a feeling of the utmost confidence in its virtues and adaptation to the diseases for which it is recommended.

It is no new and untried article, but one that has stood the test of a ten years' trial before the people; and its reputation and sale are unrivaled by any similar preparations extant. The testimony in its favor, given by the most prominent and well-known Physicians and individuals in the country, is immense, and a careful perusal of the Almanac published annually by the proprietor and to be had gratis of any of his agents, can not but satisfy the most skeptical that this remedy is really deserving the great celebrity it has obtained.

Principal Office and Manufactory, No. 96 ARCH STREET, Philadelphia, Pa. Sold by Druggists and Storekeepers in every town and village in the United States and Canadas, at 7 cents per bottle. [Oct56ly.

---




*A, Tin Can, containing Rosin-Oil. B, Gas-Generator. C, Retort-Box. D, Gasometer.*

## GAS APPARATUS,

**After the Patent of the Maryland Portable Gas Company.**

C. R. WOODWORTH & CO are now offering for sale a most complete, cheap, simple, and efficient Gas Machine, adapted, in all respects, to the wants of Private Dwellings, Public and Private Schools, Churches, Colleges, Factoires, Hotels, Watering-Places, &c., as well as of Towns and Villages. Prices for an ordinary dwelling from $350 upward. Details will be furnished by applying to

apl.1y] **C. WOODWORTH & CO., No. 74 Wall Street, N. Y.**

---

# H. N. BURROUGHS,

**No. 48 SOUTH FOURTH ST., Philadelphia,**

PROPRIETOR OF THE

## PORTAGE IRON WORKS,

BLAIR COUNTY, Pa. Orders received for all kinds of

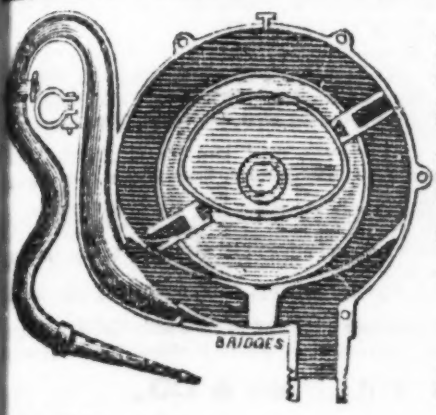
## LARGE BAR IRON AND NAILS,

Manufactured at the above Iron Works. Also, orders received for

## SEMI-BITUMINOUS COAL,

mar57tf.a] From the BARNET MINES, Broad Top Mountain, Pa.

# A. W. CARY'S ROTARY FIRE-ENGINE PUMPS.




THE Inventor, after thoroughly testing this engine pump, for the past two years, feels confident that it is not equalled by any thing now in market, in the way of raising or forcing water; the motion being rotary, the stream is constant, without the aid of an AIR vessel. The packing is self-adjusting, very durable, and can not well get out of order.

These pumps are well calculated for all the purposes for which pumps or hydrants may be used, viz., Factories, Steamboats, Tanneries, Breweries, Distilleries, Railroads, Water Stations, Hotels, Mines, Garden Engines, &c.

Among the many testimonials given of this pump, is a gold medal awarded at the last great Fair of the American Institute.

No. 1 is a house or well pump and domestic Fire Engine, and will raise from 20 to 30 gallons per minute.

No. 2 will raise 100 gallons at 120 revolutions.

No. 2½ " 200 " 120 "

No. 3 " 300 " 120 "

The quantity raised can be doubled, by doubling the revolutions. These machines are manufactured and sold by the subscribers at Brockport, N. Y.; also in this city, 240 Broadway.

Sept. 18–1y. CARY & BRAINERD.

---

## WILLIS'

## IMPROVED STUMP MACHINE

PATENTED MARCH 6, 1855.

*Farmers, Mechanics, Road Builders, Speculators, and all progressive men, your attention is called to this Valuable Patent.*

My Stump Machine has great power. It has no equal. It is simple in its construction, easily worked, and not liable to get out of repair. Its common weight is about 1500 lbs. It is easily borne from place to place, and it can be loaded in three minutes, and unloaded, set up, and a lusty stump drawn, all within fifteen minutes. Once fastened, it will pull an acre and a half of stumps without changing anchorage. A single yoke of cattle, or one strong horse, is sufficient to work it. With such a team, if necessary, a power of from three to five hundred tons can be made to bear upon a single stump!

One man can work it, though two work it at a better advantage. The time required to extract stumps from six inches to four feet in diameter, will vary from two to ten minutes. With this Machine, standing trees may be taken out, large rocks removed from their beds; and it is the best Machine ever invented, not only for pulling stumps, but for moving buildings and other heavy bodies. All the iron used is wrought, of peculiar quality, imported, sustaining 57 tons to the inch!

The price of these Machines varies according to weight and size. I will furnish the Machine at my Manufactory, together with an individual right to work it, for $200. I reside at Orange, Massachusetts, where I manufacture this article, on a large scale, and hold myself ready to furnish it, or sell rights to use it, in any State or town in the Union, now unsold, on terms most reasonable.

This patent begins to be appreciated; all who wish to bring so good a thing into use, and thereby make "a pile of money," should come to Orange, see the inventor, see the working of the Machine with their own eyes, and if not perfectly satisfied respecting its merits, all their expenses shall be cheerfully paid.

WILLIAM W. WILLIS.

REFERENCES.—New-England Agricultural Journals; Gov. Brown; Prof. Nash; Nourse & Co.; Country Gentleman, Albany; Rural and Farmer, Rochester, N. Y.; Agricultural Journals in Ohio and Michigan.

June, tf.

---

# STEVENS'

# Celebrated Patent Broad-Cast and Drill Seed-Sower,

FOR Wheat, Rye, Oats, Barley, Buckwheat, Hemp, Flax, Cotton, and Rice; also, all kinds of Grass-Seeds, together with Guano, Lime, Plaster, Bone-Dust, and Ashes; Corn, Peas, and Beans, when not planted in hill.

So simple and cheap an agricultural implement, it is believed, has never before been offered to the public.

The great amount of labor, and the large per centage of seed saved by the use of this machine, make it for the interest of every farmer, of however limited means, to own one.

There being no valves to clog, or machinery of any kind to look after, the cheapest of help can operate it with facility.

A hand-machine, costing only $35, will sow from twelve to fifteen acres daily; larger machines, using one or more horses, will sow from fifty to one hundred acres daily, and do the work in such manner, that the same quantity of seed will lie upon each square foot, rod, or acre of soil.

For further information, or rights to manufacture and use, address

**WM. S. SAMPSON, Proprietor, Boston, Mass.**

3

# GREAT AND UNUSUAL INDUCEMENTS.

## 25 PER CENT. DISCOUNT

In first-class engravings will be made, until further notice, on all *cash purchases* of LOOKING-GLASSES, PICTURE-FRAMES, ENGRAVINGS, ARTISTS' MATERIALS, &c., &c., which will be sold, *independently of the deduction*, at the LOWEST MARKET PRICES, and the privilege of selecting said deduction from an immense Stock and great variety of Fine Engravings, given to each purchaser.

In our LOOKING-GLASS DEPARTMENT may be had every variety of *Pier*, *Wall*, and *Mantel Mirrors*, *Portrait* and *Picture Frames*, *Cornices*, *Bases*, &c., of our own exclusive manufacture, from choice and original designs, not elsewhere to be obtained, and of superior quality and style.

In our FINE ART DEPARTMENT will be found first-class impressions of all the finest European Engravings, together with a general assortment of all desirable publications. Proofs, in the earliest states, of all important engravings, exhibited in advance of publication abroad, from which the trade and others can give their orders for early impressions.

In our ARTISTS' MATERIAL DEPARTMENT will be found (of superior quality, only) every requisite for the Artist, Amateur, or Pupil.

The usual discount to the Trade and Schools. Orders by letter carefully filled and packed with the utmost care.

To the economist, and all desirous of obtaining superior quality articles, at moderate prices, the above presents unusual advantages.

WILLIAMS, STEVENS, WILLIAMS & CO.,
353 Broadway, N. Y.

---

THE GEM OF THE MONTHLIES—FOR LADIES & GENTLEMEN.

GRAHAM'S ILLUSTRATED MAGAZINE

CONTAINS SPLENDID STEEL ENGRAVINGS—BEAUTIFUL COLORED STEEL FASHIONS—FINE WOOD ILLUSTRATIONS—HANDSOME PATTERNS FOR ALL KINDS OF NEEDLEWORK. THE BEST & MOST POPULAR WRITERS ARE ITS CONTRIBUTORS.
TERMS, $3 a year. Three Copies, $8. Single Copies, 25 cents.

THE GEM OF THE MONTHLIES—FOR LADIES & GENTLEMEN.

GRAHAM'S ILLUSTRATED MAGAZINE

CONTAINS SPLENDID STEEL ENGRAVINGS—BEAUTIFUL COLORED STEEL FASHIONS—FINE WOOD ILLUSTRATIONS—HANDSOME PATTERNS FOR ALL KINDS OF NEEDLEWORK. THE BEST & MOST POPULAR WRITERS ARE ITS CONTRIBUTORS.
TERMS, $3 a year. Three Copies, $8. Single Copies, 25 cents.

---

# GREEN SAND MARL,

## OF NEW-JERSEY.

THE NEW-JERSEY FERTILIZER COMPANY is now prepared to receive orders for this important Manure. For all lands upon which ashes are beneficial, the Marl is more than a substitute. Prof. COOK, in his Annual Report to the Legislature, says: "The value of these Marls is best seen in the rich and highly cultivated district which has been improved, *almost made*, by their use; but it may be interesting to examine the causes of their great value in Agriculture, and to compare them with other Fertilizers."

"For example: the potash alone may be taken at an average as five per cent. of the whole weight of the Marl—a bushel, when dry, weighs eighty pounds, and in the proportion mentioned would contain four pounds of potash; this is nearly as much as there is in a bushel of *unleached Wood Ashes*," &c. Again: "It is probable that the great value of the Marl is to be found in the fact, *that it contains nearly all the substances necessary to make up the Ash of our common cultivated plants.*"

Price, delivered on board vessel, at the wharves of the Company, at Portland Heights, N. J., SEVEN CENTS PER BUSHEL.

For further particulars, see Circular, sent free of postage. Orders for other Fertilizers will receive prompt attention. Address either of the undersigned.

CHAS. SEARS, Prest., Riceville, New-Jersey.
TAPPEN TOWNSEND, Treas., No. 82 Nassau St., New-York
Oct. 1y. GEO. W. ATWOOD, Sec'y, 16 Cedar St. New-York

# Miller's Portable Horse Power Plantation Saw Mill.

We desire to call the attention of Planters and others who feel the want of a **cheap and easily operated Saw Mill,** for occasional or permenent use, to the above-named Mill—being thoroughly satisfied that it is the best as well as **cheapest now made,** combining all the good points of the older Saw Mills with the labor-saving advantages of later inventions. The following are the principal advantages that our Saw Mill possesses over all others:

**1st. The Mill can be run either by HORSE or STEAM POWER**—Six Horses being amply sufficient to manufacture 2,500 feet of lumber from ordinary logs in twelve hours.

**2d. It is the only true Portable Saw Mill in the United States**—as with our Mill, now working in this city, we will undertake to cut 500 feet of lumber at its present situation in the forenoon, and transport the Mill five or ten miles, and cut 500 feet of lumber at its new location in the afternoon.

**3d. There is no digging required**—a most important advantage to owners of swamp or wet land.

**4th. The Log can be rolled on the Carriage without hoisting,** as the Carriage is only ten inches above the level of the ground.

**5th. We furnish the Mill COMPLETE and PERFECT.** The purchaser has nothing to do on receipt of his Mill, except to drive say eight or ten stakes to bolt the bed-pieces—brace his Mill firmly—put in his team, and commence sawing.

**6th. It is scarcely possible to put it out of repair**—and as it is substantially built of seasoned timber, its durability is great.

**7th. It can be operated by one man,** although he be unskilled in working other Saw Mills.

**8th. We will warrant the Mill to perform as above stated.**

We furnish the **Mill** complete for **$500,** and if desired, an excellent **Six Horse Power** for **$150** additional. Thus, for **$650,** we will furnish a complete machine for manufacturing lumber, which any farm laborer may operate.

We desire any intending purchaser to call and see our Mill in operation in this city, before purchasing.

To purchasers who desire to do a large Lumber Business, we would state that **we manufacture Engines and Boilers especially adapted to running the above Mill,** (the slabs and saw-dust from the logs being sufficient fuel for the boiler,) at the following rates:

Engine of 10 Horse-Power—Diameter of Cylinder 6 Inches—Length of Stroke 15 Inches, with Feed Pump attached to, and operated by, the Engine—with Locomotive Boiler 10 ft. long, with 40 Tubes, 2½ inches in diameter, and 6 ft. long.

The Fire Box is 36 inches long, and 28 inches wide—Smoke Pipe, 18 inches in diameter, and 25 feet long. This Engine and Boiler we have rated at only 10 Horse-Power, but the majority of manufacturers and mechanics would call it a good 12 Horse-Power. Price, **$1.000.**

This Power is sufficient to drive the Mill, together with a Circular Saw, Shingle Mill, a small Grist Mill, or other Machinery of a similar character. As surplus power is always of great advantage, we would not recommend a smaller Power.

## PRICES:

| | |
|---|---|
| **Saw Mills,** | **$500.** |
| **Patent Six Horse-Power,** | **150.** |
| **Engine and Boiler, as above described,** | **1,000.** |

On receipt of any of the above sums, (or on its being deposited with any responsible firm in this city, subject to our order on shipping the goods), we will ship the corresponding machinery, boxed; and, if the purchaser desires it, effect the necessary insurance on it. We can ship at one day's notice.

**T. MILLER, 120 William Street.**

ALBERT PALMER, and J. H. HUNTINGTON, } General Agents for the United States, Canada, and the West Indies.

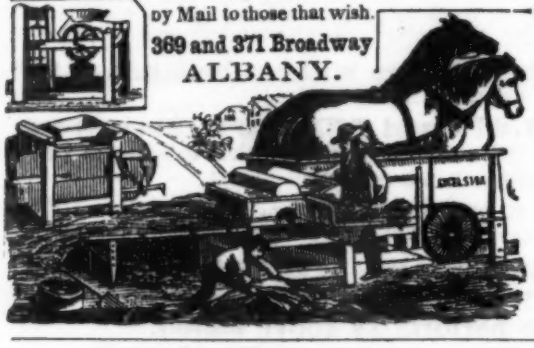
***SHINGLE MILLS, &C., TO ORDER.***

# EXCELSIOR AGRICULTURAL WORKS
## ALBANY. N.Y.

RICH^D H. PEASE.
PROPRIETOR.

"The Best, the Cheapest"

RAILWAY HORSE POWERS,
THRESHERS AND SEPARATORS,
Slitting and Cross-Cut Saw Mills,
CORN AND SEED PLANTERS,
Fanning Mills, Vegetable Cutters,
CIDER MILLS,
Dog Powers, Hay and Stalk Cutters,
*FIELD AND GARDEN SEEDS.*
Circulars, giving Prices and Warrantee, sent by Mail to those that wish.
369 and 371 Broadway
ALBANY.



JOHNSTOWN, Dec. 1, 1858.

RICHARD H. PEASE, ESQ.—Dear Sir—The Excelsior Horse Powers and Threshers, manufactured by you, are as good machines as can be made, and I threshed 500 bushels of oats in 10 hours, with one, *without sweating my horses a hair*, and can do it *day in and day out*. I think I can sell four or five machines for you next season.

Yours, etc., J. V. N. MOORE.

---

THE UNITED STATES

SELF-GENERATING

# GAS LIGHT COMPANY

Are selling Patent Rights for Towns, Villages, Cities, and Counties, for their

**BRILLIANT, PORTABLE, SAFETY**

# GAS LAMPS.

THE BEST INVENTION KNOWN FOR ARTIFICIAL LIGHT, AND ONE OF THE MOST USEFUL INVENTIONS OF THE AGE.

**Office, 329 Broadway, New-York.**

SOLOMON ANDREWS, *Sec'y.*

Julytf.

---

# The American Fertilizing Company,

Having purchased of Professor Charles Stearns, a patent granted by the United States Patent Office, on the 3d of March, 1857, are now prepared to furnish to Agriculturists their highly CONCENTRATED, NITROGENIZED, and AMMONIATED GREEN SAND MARL FERTILIZERS, being the cheapest and most enduring Fertilizer, and the only Fertiliser containing all the alkaline salts and soluble silicates so essential in the estimate of De Berg, and his compeers in chemistry, as a perfect Fertilizer.

The Company are largely interested in Guano Island, and can at all times furnish their customers of their own Columbian, Peruvian, and Mexican Guano, at their cash value, and at the lowest market prices.

SUPER-PHOSPHATE of LIME, of their own manufacture, from unburned bones, manufactured by a chemist from London, who has spent his life in acquiring a perfect knowledge of his business. For particulars, apply at the office of the Company,

april-tf.] **101 NORTH MOORE STREET, New-York.**

---

# C. A. DURGIN,

## MECHANICAL ENGINEER AND SOLICITOR OF PATENTS.

Caveats, Specifications, Assignments, and all necessary papers and drawings for procuring Patents, in this and foreign countries, prepared. Advice given on legal matters respecting inventions and infringement of Patents.

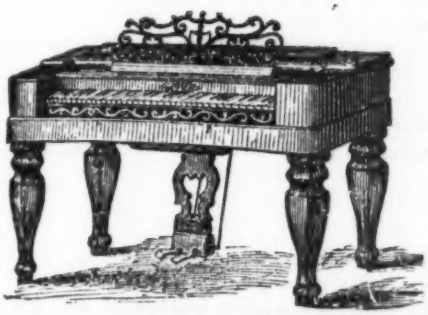
Assignments recorded at Washington, and all legal papers pertaining to Patents executed with care and promptness.

Sales of good Patents negotiated on reasonable terms.

Inventors stuck with good inventions will be assisted, and Patents secured on shares.

N. B.—Persons wishing to secure Patents will please send for Circular.

**C. A. DURGIN, Solicitor of Patents.**
**335 Broadway, (Room 2,) New-York City.**



# CHARLES AUSTIN,

MANUFACTURER OF IMPROVED

# MELODEONS,

AND

## ORGAN HARMONIUMS,

OPPOSITE THE DEPOT, CONCORD, N. H.

**Ware-rooms, 324 Washington St., Boston.**

CHARLES AUSTIN is the oldest manufacturer of Melodeons in the United States, having commenced the business at Concord, N. H., in 1835. He has made over 4,000 instruments, all of which have proved entirely satisfactory. Recently, he erected a very large factory, with steam-power attached, and has invented a number of machines which do the work more perfect than it can possibly be done by hand, and in many parts of the instrument saves one third of the labor usually required; consequently, he believes he is now prepared to sell better Instruments, and at lower prices, than can be bought in this country. He also manufactures Organ Harmoniums for churches, with Pedal Bass, with from two to six Stop Reeds.

All instruments warranted to give satisfaction, or the money will be refunded. Price List, with full descriptions, furnished when desired. The Reeds used in the celebrated Æolian Attachment to the Pianos of Messrs. T. GILBERT & Co., are manufactured by him.

Melodeon manufacturers supplied to order with Reeds of every description.

---

## NEW YORK AND ERIE RAILROAD.

On and after MONDAY, May 25, 1857, and until further notice, Passenger Trains will leave Pier foot of Duane street, as follows, viz :

DUNKIRK EXPRESS, at 6 00 A.M., for Dunkirk.

BUFFALO EXPRESS, at 6 00 A.M., for Buffalo.

Mail, at 11.00 A.M., for Dunkirk and Buffalo and intermediate stations.

ROCKLAND PASSENGER, at 3 30 P.M., via Piermont, for Suffern and intermediate stations.

WAY PASSENGER, at 4 00 P.M., for Newburgh, Middletown and intermediate stations.

EMIGRANT, at 5 00 P.M., for Dunkirk and Buffalo, and intermediate stations.

NIGHT EXPRESS, at 5 00 P.M., for Dunkirk.

NIGHT EXPRESS, at 5.00 P.M., for Buffalo.

The above Trains run daily, Sundays excepted.

---

## FOR BOSTON, VIA NEWPORT AND FALL RIVER.

By the splendid and superior steamers METROPOLIS, EMPIRE STATE and BAY STATE, of great strength and speed, particularly adapted to the navigation of Long Island Sound, running in connection with the Fall River and Old Colony Railroad, a distance of 53 miles to Boston only.

Leave Pier No. 3 N. R., near the Battery.

The steamer BAY STATE, Capt. Jewett, on Mondays, Wednesdays, and Fridays, at 5 o'clock P.M., touching at Newport each way.

The Steamer METROPOLIS, Capt. Brown, leave New York on Tuesdays, Thursdays, and Saturdays, at 5 o'clock P.M., touching at Newport each way.

These steamers are fitted with commodious state rooms and every arrangement for the security and comfort of the passengers, who are afforded by this route a night's rest on board, and, on arrival at Fall River, proceed per Steamboat train, reaching Boston early on the following morning, or may remain on board, and take the accommodation train at 6½ A.M., and reach Boston about 8¼ A.M.

A baggage master is attached to each steamer, who receives and tickets the baggage, and accompanies the same to its destination.

A steamer runs in connection with this line between Fall River and Providence daily, except Sundays.

Freight to Boston is forwarded through with great despatch by an Express Freight Train, etc., etc.

For Freight or passage apply on board, or at the office on Pier 3 N. R., where state-rooms and berths may be secured. Hereafter no rooms will be regarded as secured to any applicant until the same shall have been paid for. For further information, apply to

WILLIAM BORDEN, Agent, 70 & 71 West st.

---

## NEW YORK AND NEW HAVEN RAILROAD.

### SUMMER ARRANGEMENT.

Commencing May 25, 1857.

Passenger Station in New York, corner of Broadway and Canal street, corner 26th street and 4th avenue.

TRAINS LEAVE NEW YORK.

For New Haven, 7 00 8.00 A.M., (Ex.) 12 30, 3.30, 4.00, (Ex.) and 4.30 P.M. For Bridgeport, 7.00, 8 00 A.M., (Ex.) 12 30, 3 30, 4 00, (Ex.) and 4 30 P.M. For Milford, Stratford, Fairfield, Southport and Westport, 7 00 A.M., 12 30, 3.30, 4 30 P.M. For Norwalk, 7.00, 9.00 A.M., 12.30, 3.30, 4 00, (Ex.) 4 30, 5 15, 6 15 P.M. For Darien and Greenwich, 7 00, 9 00 A.M., 12 30, 3 30, 4.30, 5.15, 6 15 P.M. For Stamford 7.00, 8.00, (Ex.) 9.00 A.M., 12.30 3 30, 4 00, (Ex.) 4 30, 5 15, 6 15 P.M. For Port Chester and intermediate stations, 7.00, 9.00, A.M., 12.30, 3.30, 4 30, 5.15, 6.15 P.M.

TRAINS TO NEW YORK.

From New Haven, 5 30, 7.00, 9.35 A.M., (Ex.) 1.30, (Ex.) 4.30, 9.00 P.M., (Ex.) From Bridgeport, 6 10, 7 40, 10.18 A.M., (Ex.) 2 07, (Ex.,) 5.11 9 37 P.M., (Ex.,) From Norwalk, 4 45, 6 00, 6 44, 8.15, 10.53 A.M. (Ex.) 2.35, (Ex.,) and 3.00, 5 45, 10.05 P.M., (Ex.) From Port Chester, 5.27, 6.43, 7.28, 8 58., 11.30 A.M., (Ex.,) 3 43, 6.27 P.M.

July, 1857. JAMES H. HOYT.

---

## HARLEM RAILROAD—SUMMER ARRANGEMENTS.

7 : 30 A.M.—Croton Falls train, stopping at all stations.

*8 : 30 A.M.—Williamsbridge, stopping at all stations.

9 : 30 A.M.—Albany Ex. Mail, all stations above Croton Falls.

*11 : 00 A.M.—Williamsbridge, stopping at all stations.

*11 : 30 A.M.—White Plains, stopping at all stations.

2 : 30 P.M.—Williamsbridge, stopping at all stations.

3 : 30 P.M.—Millerton, stopping at all stations.

*5 : 00 P.M.—Williamsbridge, stopping at all stations.

5 : 30 P.M.—Williamsbridge, stopping at all stations.

6 : 15 P.M.—White Plains, stopping at all stations.

8 : 00 P.M.—Williamsbridge, stopping at all stations.

The trains marked thus * start fram the Twenty-sixth street Passenger Depot; the others from the Depot corner of White and Center streets.

# BALTIMORE AND OHIO RAILROAD.

PASSENGER TRAINS leave Baltimore as follows:

Accommodation, stopping over night at Cumberland, at 7 A. M.

Mail, for Wheeling, 8.30 A. M.

Accommodation for Fredricksburg, 4 P. M.

Express for Wheeling, 7 P. M.

TRAINS FOR BALTIMORE leave as follows:

Mail leaves Wheeling at 8.30 A. M.

Express leaves Wheeling at 4.40 P. M.

Accommodation leaves Cumberland for Baltimore, at 9 A. M.

Accommodation leaves Frederick for Baltimore, at 9.15 A. M.

## WASHINGTON BRANCH.

PASSENGER TRAINS leave Camden Station for Washington, 4.15, 8, and 5.15 P. M.

Leave Washington for Baltimore, at 6 and 8.30 A. M., and 3 and 4.20 P. M.

Tonnage Trains

Leave Baltimore, (Mount Clare Junction) at 4.30 A. M., and Washington at 11.10 A. M.

# PHILADELPHIA AND BALTIMORE LINES.

PHILADELPHIA, WILMINGTON AND BALTIMORE RAILROAD. On and after MONDAY, December 1st, 1856, PASSENGER TRAINS LEAVE PHILADELPHIA FOR

Baltimore at 8 A. M., 1 P. M. (Express). and 11 P. M.
Wilmington at 8 A. M., 1, 4 15, and 11 P. M.
New-Castle at 8 A. M., and 1 and 4.15 P. M.
Middletown at 8 A. M., and 4 15 P. M.
Dover at 8 A. M., and 4.15 P. M.
Seaford at 8 A. M., and 3.30 P. M.

TRAINS FOR PHILADELPHIA LEAVE

Baltimore at 8 40 (Express), 11 A. M., and 6.45 P. M.
Wilmington at 7.10 and 11.45 A. M., 2 38 and 10.10. P.M
New-Castle at 7 30 and 11.05 A. M., and 9.20 P. M.
Middletown at 10.00 A. M., and 8.19 P. M.
Dover at 8.50 A. M., and 7.10 P. M.
Seaford at 7 A. M., and 4.10 P. M.

TRAINS FOR BALTIMORE LEAVE

Wilmington at 9.15 A. M., 2 P. M., and 12.17 A. M.

BALTIMORE and HAVRE-DE-GRACE ACCOMMODATION TRAIN LEAVES

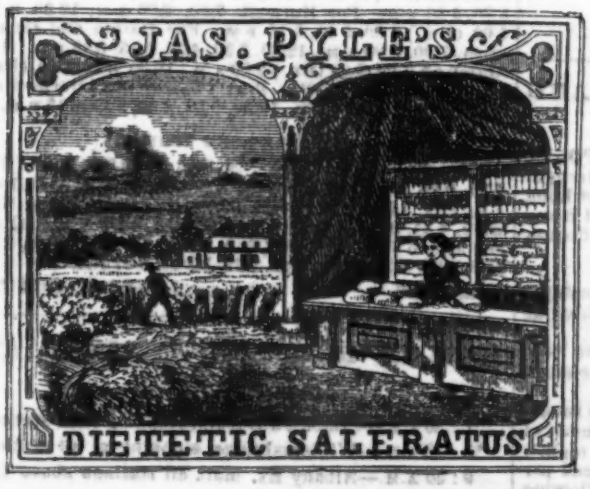
Havre-de-Grace at 7.05 P. M.
Baltimore at 4.15 P. M.

FREIGHT TRAINS, WITH PASSENGER CAR ATTACHED, LEAVE

Philadelphia for Perryville and intermediate places at 6.00 P. M.
Wilmington for Perryville and intermediate places at 8.10 P. M.

**S. M. FELTON, President.**

# HEALTHY BREAD.




Every housekeeper should feel the necessity of preparing bread, biscuit, cake, and all kinds of pastry with materials that are strictly Wholesome. There are thousands of sufferers, from dyspepsia and other diseases, brought on by the use of common Saleratus—the caustic alkaline impurities of which are destructive to the digestive organs, and pave the way for diseases of every kind.

These facts are seriously demonstrated by the mortality among children of the present day, from infantile diseases, which, in former days, were simple and manageable without medical aid. Caustic alkali has a strong affinity for animal matter, and not only destroys the coating of the stomach, by which our food is digested, but actually penetrates and lodges in the whole system, the presence of which is terrible in cases of fever. Parents, if you regard the health of your children and all around you, ask your grocer for

## JAMES PYLE'S DIETETIC SALERATUS.

which is as harmless as flour, and never fails in making bread, biscuit, and cake beautifully light. Common Saleratus nor Baking Soda can not compare with it any way. The remarkable degree of purification reached in the manufacture of *James Pyle's Dietetic Saleratus* is acknowledged by eminent Chemists, Homeopathic and Allopathic Physicians, and thousands of the most intelligent families in New England. It therefore must come into general use. One trial satisfies any intelligent lady of its marked superiority. Beware of imitations, got up by jealous rivals. Our immense sales annoy them, and they apply the word "Dietetic" to their unrefined productions, hoping thereby to confuse purchasers and effect sales. The genuine has the annexed picture and the name of JAMES PYLE, the sole originator, on every package.

**Manufacturing Depot Removed from 114 Warren Street to**

**313 WASHINGTON STREET, NEW YORK**

more, at

30 A. M.,

mber 1st,

A. M.

COMMO-

CAR AT-

places at

places at

dent.

cessity
l kinds
Whole-
, from
on by
e alka-
to the
or dis-

by the
t day,
r days,
edical
ity for
e coat-
is di-
ges in
is ter-
regard
d you,

mmon
eached
pathic
e must
ations,
unre-
d pic-

K

FR

B

S

M

CO

CON

MA

CH

DR
Exan
lishe
conn
will
for L
Coun
case
re-is
Ha
Roon
acce
thor
inve
work

# ISN'T IT SO?

## FRESH FRUIT IN WINTER BETTER THAN SWEETMEATS.

Use ARTHUR'S Celebrated Self-Sealing Cans and Jars, and you will have fresh fruit all the year at Summer's prices.

Full directions for putting up all kinds of Fruit and Tomatoes, accompany these Cans and Jars.

They are made of Tin, Glass, Queensware, and Fire and Acid-Proof Stoneware. The sizes are from pints to gallons. These Cans and Jars are entirely open at the tops, and NEST, to secure economy in transportation.

For sale by Storekeepers throughout the United States.

Descriptive Circulars sent on application. ☞ Orders from the Trade solicited.

Be sure to ask for Arthur's. It has stood the test of two seasons, having been used by hundreds of thousands of families, hotels, and boarding-house keepers. We are now making them for the million.

**ARTHUR, BURNHAM & GILROY,**

MANUFACTURERS UNDER THE PATENT,

N. E. Corner Tenth and George Streets, Philadelphia.

**E. P. TORREY, Manufacturers' Wholesale Agent,**

*Also, Manufacturer of Masser's Wonderful Five Minute Freezer,*

No. 6 PLATT STREET, NEW-YORK.

---

# ALLEN'S

PATENT IMPROVED

# MOWING MACHINE,

AND

**COMBINED MOWER and REAPER.**

Strong, Simple in Construction,

NOT LIABLE TO GET OUT OF ORDER,

**COMPACT, LIGHT, EASY of DRAFT,**

Perfectly Safe to the Driver, and

MAY BE WORKED AT A SLOW GAIT,

BY HORSES OR OXEN.

## NO CLOGGING OF KNIVES.

WORKS WELL ON ROUGH GROUND, ALSO ON SIDE-HILLS, SALT AND FRESH MEADOWS, AND

**IN ANY KIND OF LODGED GRASS and CLOVER.**

**Warranted to give Entire Satisfaction.**

MANUFACTURED AT THE

AGRICULTURAL IMPLEMENT MANUFACTORY,

And for sale at the Warehouse, of

**R. L. ALLEN, 189 & 191 Water St.,**

July1t. NEW-YORK.

---

## PATENT AGENCY

AND

# CHEMICAL LABORATORY,

AT

**WASHINGTON, D. C.**

DR. DANIEL BREED, late Assistant and acting Chief Examiner in the United States Patent Office, has established at Washington, D. C., a PATENT AGENCY in connection with a CHEMICAL LABORATORY. He will prepare papers and drawings, and make applications for Letters Patent in the United States and in Foreign Countries, and will give especial attention to chemical cases, and also to infringements, interferences, appeals, re-issues, and rejected applications.

Having long been familiar with the Library and Model Rooms of the Patent Office, to all of which he still has access, he possesses extraordinary facilities for making thorough examinations in regard to the patentability of inventions, being enabled also to search the standard works in German and French, and thus to give to inventors, and others, reliable information concerning inventions and the arts in Europe and America.

The Laboratory is intended chiefly for experiment and analysis, for the purpose of testing and improving processes of manufacture and apparatus employed in the Chemical Arts, as also for the purpose of procuring and defending Patent Rights. After many years devoted to Chemistry—having studied in the German Laboratories under Liebig and Lowig, DR. BREED feels confident in offering his services to Inventors and others interested in the chemical arts and manufactures, and to all who may require the services of a practical chemist.

Fees are most conveniently sent by mail, in drafts on New-York, Baltimore, Boston, or Philadelphia.

Models may be forwarded by Express, and all other business may be transacted by letter. Persons may also forward models and fees, and transact other business with Dr. Breed, through Messrs. Parish & Nash, editors of *The Plough, Loom, and Anvil.*

☞ Patents procured through this Office, will be noticed in the *Plough, Loom, and Anvil*, and full descriptions given therein, when desired, without charge.

June, tf.

# The Plough, the Loom, and the Anvil;

AN

# AMERICAN FARMERS' MAGAZINE

AND

## MECHANICS' GUIDE.

---

# PROSPECTUS AND BUSINESS DIRECTORY

## FOR VOLUME X., COMMENCING JULY, 1857.

---

For the purpose of bringing the future Volumes into accordance with the year, the 10th Volume will comprise but six months, ending with January, 1858. It will be complete in itself, with Title-page and Index; will contain 400 pages, half the usual number, and will be sold at $1 to single subscribers, and 75 cents each to Clubs.

### AGRICULTURE AND HORTICULTURE.

Thirty-two pages of each number will be devoted to an earnest advocacy of the Farmer's rights, to a faithful exposition of his duties in all practical matters of farm-life, and to so much of Horticulture as may prove useful to families with whom gardening and fruit-growing, if not a primary, are yet important interests.

### MANUFACTURES AND THE MECHANIC ARTS.

About sixteen pages will be devoted to these, the topics selected to be of a character to interest the Farmer as well as the Mechanic, and to give the work a high value for both.

### MISCELLANEOUS.

Science, as related to the Industrial Employments, Domestic Economy, Amusement, Literature, and General Intelligence will occupy the remaining pages.

### OUR OBJECT IS,

To condense into our pages as much of practical value as we are able, to avoid whatever is sectional or immoral, and to make our work a pleasing and instructive family visitor.

### TERMS:

$2 a year to single subscribers; $1.50 each to Clubs of four or more; $1 for a single copy, six months; advertisements, 10 cents a line. Payment to be made, in all cases, in advance.

### REMITTANCES.

Drafts are preferred; but when these can not be conveniently obtained, money (in registered letters, if over $2) may be forwarded at our risk.

### NEW SUBSCRIBERS,

Advancing before the first of July, for the work from that time onward, shall receive the May and June Nos. gratis

### PUBLISHING OFFICE,

No. 7 Beekman Street, N. Y., Room 17, Nassau Bank Building, entrance from Beekman Street, one door west from Nassau, towards Park Row.

*This number commences our Tenth Volume. Subscribers who have paid to this time, and not beyond, will please advance for the ensuing year; and the few who are in arrears, will confer a favor by enclosing the amounts due without delay.*

J. A. NASH. M. P. PARISH.